RENEW Report 11

2000-2001 ANNUAL REPORT

RECOVERY OF NATIONALLY ENDANGERED WILDLIFE

Canadian Endangered Species Conservation Council

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Design and layout by Tracy Carefoot Visual

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Disclaimer:

We are grateful to the recovery community, notably the recovery team chairs and responsible jurisdictions, for contributing the information for this report. However, the Canadian Wildlife Service disclaims responsibility for the accuracy of the information contributed.

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REPORT from the CO-CHAIRS

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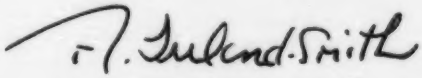
IT IS ALWAYS SATISFYING TO REVIEW THE YEAR'S ACCOMPLISHMENTS IN THE FIELD OF RECOVERY. Work is underway on a growing number of species, more recovery teams are in place to plan and coordinate this work, and partnerships continue to form, bringing new resources and talents to strengthen the national recovery program, RENEW. Greater levels of funding from both government and non-government sectors backed by strong community support are enabling recovery teams and action groups to make a difference on the ground for species at risk of extinction. However, there are still nationally endangered and threatened species for which recovery teams and programs have not yet been established. We are conscious of the magnitude of the task ahead.

Recovery teams operate in physical and social environments that are characterized by many competing interests. The nature of team work is critical to recovery success, as "an incredible synergism" (to quote one team chair) is created when aboriginal people, volunteers, professors and their graduate students, stakeholders, jurisdictional representatives and others with a direct interest in the species or its habitat come together to develop a course of action for recovery. The passion for species recovery that characterizes both salaried and volunteer team members and associates never seems to wane. We take our hats off to them all!

Fortunately, national recovery teams don't have to operate in isolation. There is guidance in the form of an operations manual which is being developed by the National Recovery Working Group of government and non-government recovery experts. This group makes recommendations to the Canadian Wildlife Directors Committee (see the back cover) which in turn is directed by the Canadian Endangered Species Conservation Council as established under the Accord for the Protection of Species at Risk. Two-part recovery plans (recovery strategy plus recovery action plan), broader team membership, greater emphasis on public consultation and increasing government support for stewardship of species at risk habitat are among the recent changes that have been introduced to strengthen the recovery process.

This annual report summarizes the recovery actions and planning underway for nationally endangered and threatened species during the 2000-2001 fiscal year. It also includes a look at some of the approaches being taken to recover species, profiles the more detailed information available through the species at risk web site (**www.speciesatrisk.gc.ca/Species/English/Default.cfm**), and reports on the funding contributed and invested in species recovery.

David Brackett
Director General
Canadian Wildlife Service



Adair Ireland-Smith
Managing Director, Ontario Parks
Ontario Ministry of Natural Resources

Co-Chairs, Canadian Wildlife Directors Committee

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HIGHLIGHTS of 2000-2001

Of 107 Endangered and 76 Threatened species on the Nov. 2000 COSEWIC list:

64 have recovery teams in place

19 have approved plans, 6 more awaiting approval

25 have recovery plans or strategies in draft form

68 are the focus of recovery efforts, 40 others are included in ecosystem recovery

17 show stable or increasing population trend

$ 26.6 million expended on recovery (salaries + expenses)

Employment equivalent to about 129 salaried and 25 volunteer people working full-time

214 organizations made financial contributions

APPROACHES to RECOVERY

APPROACH (SCALE)	CONSIDERATIONS AND QUALITIES	EXAMPLE
Single species	• distinct species with respect to habitat requirements and threats • only listed species in geographical area	**Vancouver Island Marmot**
Recovery units	• species occurs in two or more distinct geographical areas • loss of any of areas diminishes capacity to survive or recover	**Piping Plover**
Multiple species or threat abatement*	• two or more species in same genus or same geographical region • species share a common threat	**Acadian Flycatcher, Hooded Warbler**
Ecosystem based*	• deals with select sites of a common ecosystem type, not necessarily continguous within an ecologically defined area • considers the integrity of the ecosystem as a whole, is not limited to species at risk	**Garry Oak Ecosystems**
Landscape based*	• deals with the multitude of ecosystems contiguous within a given geographically defined area • is not limited to species at risk	**South Okanagan-Similkameen Conservation Program**
International	• species' range extends beyond Canada's borders	**Whooping Crane**

** Species-specific goals and objectives still need to be identified and addressed in order to be able to evaluate recovery progress*

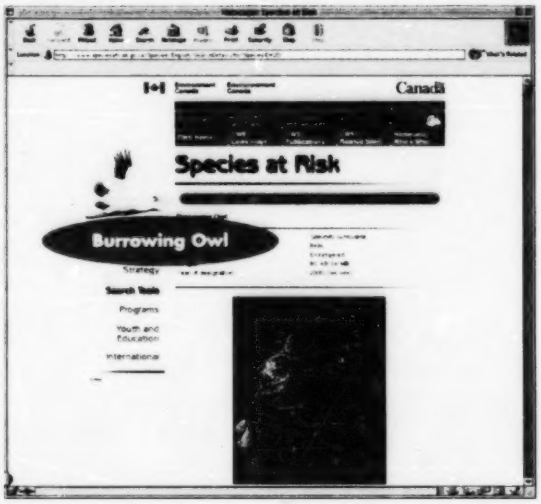
SPECIES AT RISK WEB SITE COVERAGE

Try our "species search" web site at

www.speciesatrisk.gc.ca/Species/English/SearchRequest.cfm

to learn more about recovery

1



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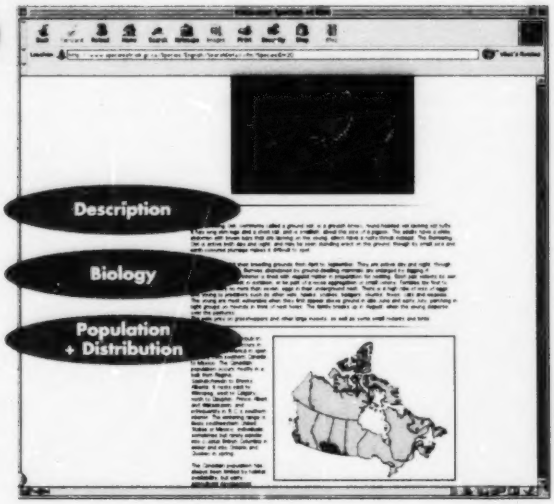

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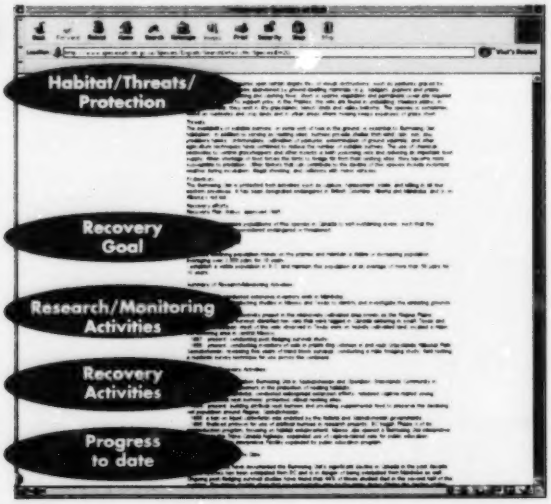

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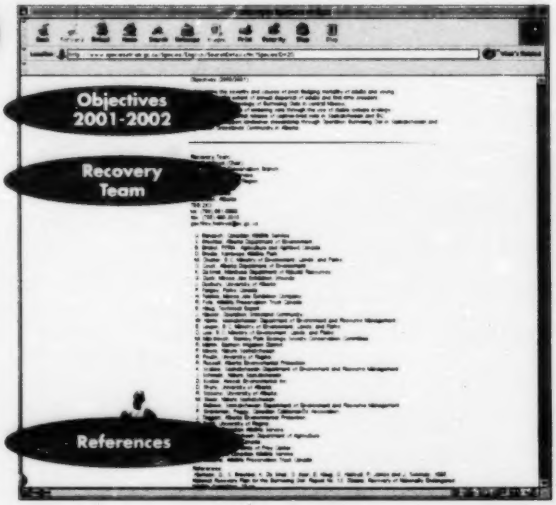

STATUS of RECOVERY PLANNING

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	MAMMALS			
1	**Badger, American** *Taxidea taxus jeffersonii* Not at Risk (1979) Endangered (2000)	BC, Parks Canada Agency (Parks)	Ian Adams, *BC – Water, Land and Air Protection (BC - MWLAP)* Ian.Adams@gems7.gov.bc.ca; replaced in 2001 by Mike Badry, *BC – MWLAP*, Mike.Badry@gems4.gov.bc.ca	recovery team is in place; recovery planning has been initiated, in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
2	**Bat, Pallid** *Antrozous pallidus* Special Concern (1988) Threatened (2000)	BC, Canadian Wildlife Service (CWS)	contact: Orville Dyer, *BC – MWLAP*, Orville.Dyer@gems4.gov.bc.ca	plan to produce a recovery action plan for this species, in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
3	**Bison, Wood** *Bison bison athabascae* Endangered (1978), Threatened (1988, 2000)	MB, AB, BC, NWT, YT, CWS, Parks	Cormack Gates, *University of Calgary*, ccgates@nucleus.com	recovery plan has been approved and is in press; recovery action has been underway since 1963
4	**Caribou, Peary** *Rangifer tarandus pearyi* High Arctic pop., Endangered (1991) Banks Island pop., Endangered (1991) Low Arctic pop., Threatened (1991)	NWT, NU, Nunavut Wildlife Management Board (NWMB), Inuvialuit Game Council (IGC), CWS, Parks	Anne Gunn, *NWT – Resources, Wildlife & Economic Development*, anne_gunn@gov.nt.ca; replaced in 2001 by James Schaefer, *Trent University*, jschaefer@trentu.ca	recovery strategy has been submitted for approval
5	**Caribou, Woodland** [Atlantic – Gaspésie pop.] *Rangifer tarandus caribou* Threatened (1984) Endangered (2000)	QC	Contact: Gilles Lamontagne, *Faunes et Parcs, Québec (QC – FAPAQ)* gilles.lamontagne@ fapaq.gouv.qc.ca	recovery plan was approved in 1993; the goal and objectives of the plan were attained and the recovery team was disbanded; FAPAQ has continued recovery activities for this pop.; a new team will be formed in 2001-2002
6	**Caribou, Woodland** [Boreal pop.] *Rangifer tarandus caribou* Threatened (2000)	NWT, BC, AB, SK, MB, ON, QC, NF, Parks; national strategy development coordination by CWS (simon.nadeau@ec.gc.ca)	*NWT*: anne_gunn@gov.nt.ca; *BC*: Ian.Hatter@gems6.gov.bc.ca; *AB*: Dave.Hervieux@gov.ab.ca; *SK*: earl.wiltse.erm@govmail. gov.sk.ca; *MB*: wwatkins@gov.mb.ca; *ON*: karen.hartley@mnr.gov.on.ca; *QC*: gilles.lamontagne@fapaq.gouv.qc.ca; *NF*: joebrazil@mail.gov.nf.ca; *Parks*: gilles_seutin@pch.gc.ca	responsible jurisdictions will participate in a national technical committee that will facilitate development and implementation of regional recovery strategies and regional recovery action plans
7	**Caribou, Woodland** [Southern Mountain pop.] *Rangifer tarandus caribou* Threatened (2000)	BC, AB, Parks	Ian Hatter and James Quayle, *BC – MWLAP*, Ian.Hatter@gems6.gov.bc.ca; James.Quayle@gems6.gov.bc.ca	jurisdiction-specific plans are under development in each province; these are to be integrated in an "umbrella" document; in BC: second draft of Mountain Caribou Recovery Plan, first draft of Northern Caribou Recovery Plan, first draft of South Purcells Herd Recovery Plan

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
< 200 – declining	highway mortality; agricultural and urban development; reduction in prey; control of badgers as nuisance animals; forest ingrowth	to contain the current decline in badger numbers across BC by addressing mortality sources, low natality and connectivity	research underway in East Kootenay and Kamloops areas examining habitat use, movement, mortality sources and recruitment
pop. size is unknown; very restricted range in Canada (≤ 500 km^2 of BC's Okanagan Valley)	loss or fragmentation of habitat due to extensive development; potential impacts on prey species due to heavy grazing	to conduct research to identify site-specific conservation options; to promote awareness and ecologically sustainable land use	population surveys
3,536 (2,828 wild and 708 in captivity, free of brucellosis and tuberculosis, comprising 6 pops in the wild and 4 captive breeding herds) (2000 estimates)	habitat loss due to industrial and agricultural development, increased access; disease; loss of genetic diversity; predation by wolves	to reestablish ≥ 4 viable, healthy, free-roaming wood bison pops in their original range and other herds where the potential exists; to ensure the genetic integrity of wood bison; to restore wood bison for the benefit of local communities and society in general	YT: herd is stable, exceeds the goal of 400 and is being harvested sustainably; AB: established a herd on tribal lands; NWT: successful second year of calving in Hook Lake captive breeding herd (capturing and treating juveniles from a diseased wild herd and propagating them in captivity)
smallest pops are Banks Isl.: 365-507 caribou 1 year old (1998); NW Victoria Isl.: 433-583 caribou 1 year old (1998); Prince of Wales-Somerset Isl.: <100, no calves seen (1995)	uncertainty of climate trends, unknown levels of wolf predation, unknown relationship among muskoxen, wolves and caribou	to prevent extinction of all caribou pops; to enable endangered pops to improve their status to threatened; and to enable threatened pops to improve their status to special concern	the harvest quota was continued on Banks, northwest Victoria and Bathurst islands
this small isolated population south of the St. Lawrence River declined from ~500-1000 individuals in the 1950s to ~200 in the 1970s; ~150 in the Chic-Chocs area in 2000	loss and alteration of habitat by logging and agriculture; vulnerability of the animals to hunting (hunting of the caribou pop. is prohibited) and global warming; predation, particularly by coyotes and bears, resulting in low calf survival	to maintain a survival rate of 50% for fawns throughout their first summer, which by the fall should yield ≥ 30 fawns per 100 females; to maintain a survival rate of 50% for fawns aged 6 months to 2 years; to ensure that the size of the pop. does not fall below 200 animals	legal designation of the pop. under provincial legislation is imminent and will include special habitat protection measures; key habitat is protected within a provincial park
numbers and distribution have decreased throughout most of the range	habitat loss and fragmentation; human disturbance; increased predation; low reproductive rate	to be determined	preliminary discussions to agree on best approach for recovery of this widespread pop.; an important study of woodland caribou in QC is underway, with a chapter on the impact of forestry
BC: 2300 individuals of mountain caribou (arboreal lichen-foraging ecotype) and 4800 individuals of northern caribou (terrestrial lichen-foraging ecotype) – overall decline	isolation, small sizes of subpops; destruction and fragmentation of contiguous old-forest habitats; alteration of predator-prey relationships; disturbance on backcountry winter range; forest health issues (insects, fire)	BC: to maintain pops of 2500-3000 mountain caribou throughout their current range; enhance the recovery of identified threatened subpops; foster stakeholder support	BC: guidelines developed for forest managers and back-country recreation operators working in caribou habitat; problem analysis for captive breeding program; map of current distribution of subpops

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STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	MAMMALS			
8	**Ferret, Black-footed** *Mustela nigripes* Extirpated (1974, 2000)	SK, AB, MB, Parks	Earl Wiltse, *SK – Environment and Resource Management,* Earl.Wiltse.erm@govmail.gov.sk.ca	recovery efforts are on hold
9	**Fox, Swift** *Vulpes velox* Extirpated (1978); Endangered (1998, 2000)	AB, SK, MB, Parks	Steve Brechtel, *AB – Sustainable Resource Development,* sbrechte@env.gov.ab.ca	recovery plan was approved in 1995
10	**Marmot, Vancouver Island** *Marmota vancouverensis* Endangered (1979, 1997, 2000)	BC	Doug Janz, *BC – MWLAP,* doug.janz@gems2.gov.bc.ca	first plan was approved in 1994, updated plan was approved in 1999 and published in 2000
11	**Marten, American** [Newfoundland pop.] *Martes americana atrata* Threatened (1986) Endangered (1996, 2000)	NF, Parks	Joe Brazil, *NF – Tourism, Culture, Recreation,* joebrazil@mail.gov.nf.ca	recovery plan was approved in 1995, update is overdue
12	**Otter, Sea** *Enhydra lutris* Endangered (1978) Threatened (1996, 2000)	DFO (Fisheries and Oceans Canada), BC	contact: Mary Hobbs, *DFO,* hobbsm@dfo-mpo.gc.ca	
13	**Whale, Beluga** [Southeast Baffin Island – Cumberland Sound pop.] *Delphinapterus leucas* Endangered (1990)	DFO, NU, NWMB	Holly Cleator, *DFO,* cleatorh@dfo-mpo.gc.ca	will be prepared in 2001-2002
14	**Whale, Beluga** [St. Lawrence River pop.] *Delphinapterus leucas* Endangered (1983, 1997)	DFO, QC, Parks	Richard Bailey, *DFO,* baileyr@dfo-mpo.gc.ca	recovery plan was published in 1995; it will be updated in 2001-2002
15	**Whale, Bowhead** [Eastern Arctic pop.] *Balaena mysticetus* Endangered (1980)	DFO, NU, NWMB	Pete Ewins, *World Wildlife Fund Canada (WWF),* pewins@wwfcanada.org; and Sue Cosens, *DFO,* cosenss@dfo-mpo.gc.ca	"conservation strategy" is nearing completion and should be available as of September 2001
16	**Whale, Killer** [North Pacific "resident" pop.] *Orcinus orca* Threatened (1999)	DFO	Ed Lochbaum, *DFO,* lochbaume@dfo-mpo.gc.ca	development of a plan is being considered

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
~ 30 adults in captivity in Canada	the prey base (black-tailed prairie dogs) is too limited to sustain a wild pop. of ferrets	to participate in captive breeding; to determine the feasibility of releasing the ferret in the Val Marie area of SW SK – if feasible, to develop a detailed plan for the release and management of ferrets	captive breeding program at Toronto Zoo continues
279 foxes in the wild (1999) – 2 wild pops remain small	small pops. subject to severe climatic variation; accidental poisoning or trapping; cultivation and industrial development of key mixed-grass prairie habitats; predation by coyotes	to achieve a viable, self-sustaining pop. of swift foxes, well distributed across suitable habitats on the Canadian prairies, which would result in its removal from the endangered category	small pops have become established in two areas – further reintroductions are on hold; the national census was repeated in winter 2000-2001
36 marmots in the wild, 40 in captivity (2000) – declining	small pop. and confined geographic distribution; associated impacts due to logging; disease; predation by cougars, wolves and eagles	to maintain the existing Nanaimo-Cowichan Lake pop. at ≥ 200 animals, within the species' currently known range; to request downlisting to threatened when a second stable or increasing pop. of 100-200 animals is discovered or established	captive breeding underway in Toronto and Calgary zoos and at a private facility in BC; significant fundraising by Marmot Recovery Foundation; new Mt. Washington breeding facility under construction
~ 300 marten in Newfoundland (1998) – believed to be stable	habitat loss from timber harvesting and fires; accidental trapping and snaring	to establish or maintain 3 short-term, individual fall pops of ≥ 50 martens each; to protect against the possibility of extirpation of the marten at Little Grand Lake (western NF)	progress in developing captive breeding techniques in Salmonier Nature Park; establishment of reserves; recent pop. stability
> 1522 individuals (1995) – increasing trend (18.6% per year; 1995 estimate)	food availability (e.g., sea urchins); oil spills and other environmental contamination; predation by eagles, killer whales, sharks; conflict with commercial fisheries (e.g., incidental take)		once extirpated from Canada due to overhunting, otters were successfully reintroduced to BC and now play an important role in improving the health of the Pacific coast ecosystem
~1500 belugas in this pop. (1999); they appear to be limited to Cumberland Sound	historically, over-exploitation from which the pop. has not recovered	to be determined	creation of the South-east Baffin Beluga Co-mgmt Committee to advise the Nunavut Wildlife Mgmt Board on beluga management
~1000 individuals, based on aerial survey index (2000) – trend is stable or increasing; more assessment is needed	small and isolated pop. threatened by collision and disturbance from navigation (commercial and ecotourist) and exposed to increasing levels of toxic chemicals	to recover the pop. to the point where numbers and conditions have reached a state in which natural events and human activities no longer threaten its survival; it is anticipated that the pop. will always be vulnerable	a review of initial plan implementation is available from the recovery team chair or from World Wildlife Fund Canada
~300 whales in Hudson Bay/Foxe Basin (1994 and 1995); ≥ 350 whales in Baffin Bay/ Davis Strait (1993); pop. is increasing according to Inuit Bowhead Knowledge Study (2000)	changes in ice conditions as a result of climate change may be causing changes in whale distribution and increasing exposure to killer whale predation; underwater noise from shipping traffic and seismic vessels produces avoidance behaviour	to identify and protect important areas; establish long-term monitoring and research program; ensure Inuit subsistence harvest; mitigate human activities; improve communications	stock relationships, sizes and boundaries are being described through genetic analyses, data from satellite transmitters and aerial surveys; initiation of community-based habitat stewardship project in key late summer feeding area
northern residents have been increasing steadily since 1970s; southern residents reached high of 98 individuals in 1995, but have since declined by 15% to 82 animals in 2000	increased vessel traffic, reduced food supply (e.g., chinook salmon), and high contaminant levels; very small pop. size and low potential rate of growth	key research areas include distribution and diet, pop. discreteness and viability, and contaminants; management priorities have yet to be established	research into genetics, contaminants, movements and critical habitats; acoustic monitoring of occurrence by interpretation of dialects; volunteer sightings network

STATUS OF RECOVERY PLANNING CONTINUED

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	MAMMALS			
8	**Ferret, Black-footed** *Mustela nigripes* Extirpated (1974, 2000)	**SK**, AB, MB, Parks	Earl Wiltse, *SK – Environment and Resource Management* Earl Wilt e erm@govmail.gov.sk.ca	recovery efforts are on hold
9	**Fox, Swift** *Vulpes velox* Extirpated (1978); Endangered (1998, 2000)	AB, SK, MB, Parks	Steve Brechtel, *AB – Sustainable Resource Development*, sbrechte@env.gov.ab.ca	recovery plan was approved in 1995
10	**Marmot, Vancouver Island** *Marmota vancouverensis* Endangered (1979, 1997, 2000)	BC	Doug Ianz *BC – MWLAP* doug ianz@gems2.gov.bc.ca	first plan was approved in 1994 updated plan was approved in 1999 and published in 2000
11	**Marten, American** [Newfoundland pop.] *Martes americana atrata* Threatened (1986) Endangered (1996, 2000)	NF, Parks	Joe Brazil, *NF – Tourism, Culture, Recreation*, joebrazil@mail.gov.nf.ca	recovery plan was approved in 1995, update is overdue
12	**Otter, Sea** *Enhydra lutris* Endangered (1978) Threatened (1996, 2000)	DFO (Fisheries and Oceans Canada), BC	contact: Mary Hobbs, *DFO* hobbsm@dfo-mpo.gc.ca	
13	**Whale, Beluga** [Southeast Baffin Island – Cumberland Sound pop.] *Delphinapterus leucas* Endangered (1990)	DFO, NU, NWMB	Holly Cleator, *DFO*, cleatorh@dfo-mpo.gc.ca	will be prepared in 2001-2002
14	**Whale, Beluga** [St. Lawrence River pop.] *Delphinapterus leucas* Endangered (1983, 1997)	DFO, QC, Parks	Richard Bailey, *DFO*, baileyr@dfo-mpo.gc.ca	recovery plan was published in 1995, it will be updated in 2001-2002
15	**Whale, Bowhead** [Eastern Arctic pop.] *Balaena mysticetus* Endangered (1980)	DFO, NU, NWMB	Pete Ewins, *World Wildlife Fund Canada (WWF)*, pewins@wwfcanada.org; and Sue Cosens, *DFO*, cosenss@dfo-mpo.gc.ca	"conservation strategy" is nearing completion and should be available as of September 2001
16	**Whale, Killer** [North Pacific 'resident' pop.] *Orcinus orca* Threatened (1999)	DFO	Ed Lochbaum, *DFO*, lochbaume@dfo-mpo.gc.ca	development of a plan is being considered

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
~ 30 adults in captivity in Canada	the prey base (black-tailed prairie dogs) is too limited to sustain a wild pop. of ferrets	to participate in captive breeding to determine the feasibility of releasing the ferret in the Val Marie area of SW SK – if feasible to develop a detailed plan for the release and management of ferrets	captive breeding program at Toronto Zoo continues
279 foxes in the wild (1999) – 2 wild pops remain small	small pops. subject to severe climatic variation, accidental poisoning or trapping; cultivation and industrial development of key mixed-grass prairie habitats; predation by coyotes	to achieve a viable, self-sustaining pop. of swift foxes, well distributed across suitable habitats on the Canadian prairies, which would result in its removal from the endangered category	small pops have become established in two areas – further reintroductions are on hold; the national census was repeated in winter 2000-2001
36 marmots in the wild 40 in captivity (2000) – declining	small pop. and confined geographic distribution associated impacts due to logging, disease, predation by cougars, wolves and eagles	to maintain the existing Nanaimo-Cowichan Lake pop. at ≥ 200 animals within the species' currently known range; to request downlisting to threatened when a second stable or increasing pop. of 100-200 animals is discovered or established	captive breeding underway in Toronto and Calgary zoos and at a private facility in BC; significant fundraising by Marmot Recovery Foundation; new Mt. Washington breeding facility under construction
~ 300 marten in Newfoundland (1998) – believed to be stable	habitat loss from timber harvesting and fires; accidental trapping and snaring	to establish or maintain 3 short-term, individual fall pops of ≥ 50 martens each; to protect against the possibility of extirpation of the marten at Little Grand Lake (western NF)	progress in developing captive breeding techniques in Salmonier Nature Park; establishment of reserves; recent pop. stability
> 1522 individuals (1995) – increasing trend (18.6% per year, 1995 estimate)	food availability (e.g., sea urchins); oil spills and other environmental contamination; predation by eagles, killer whales, sharks; conflict with commercial fisheries (e.g., incidental take)		once extirpated from Canada due to overhunting, otters were successfully reintroduced to BC and now play an important role in improving the health of the Pacific coast ecosystem
~1500 belugas in this pop. (1999); they appear to be limited to Cumberland Sound	historically, over-exploitation from which the pop. has not recovered	to be determined	creation of the Southeast Baffin Beluga Co-mgmt Committee to advise the Nunavut Wildlife Mgmt Board on beluga management
~1000 individuals, based on aerial survey index (2000) – trend is stable or increasing, more assessment is needed	small and isolated pop. threatened by collision and disturbance from navigation (commercial and ecotourist) and exposed to increasing levels of toxic chemicals	to recover the pop. to the point where numbers and conditions have reached a state in which natural events and human activities no longer threaten its survival, it is anticipated that the pop. will always be vulnerable	a review of initial plan implementation is available from the recovery team chair or from World Wildlife Fund Canada
~300 whales in Hudson Bay/Foxe Basin (1994 and 1995); ≥ 350 whales in Baffin Bay/Davis Strait (1993); pop. is increasing according to Inuit Bowhead Knowledge Study (2000)	changes in ice conditions as a result of climate change may be causing changes in whale distribution and increasing exposure to killer whale predation; underwater noise from shipping traffic and seismic vessels produces avoidance behaviour	to identify and protect important areas; establish long-term monitoring and research program; ensure Inuit subsistence harvest; mitigate human activities; improve communications	stock relationships, sizes and boundaries are being described through genetic analyses, data from satellite transmitters and aerial surveys; initiation of community-based habitat stewardship project in key late summer feeding area
northern residents have been increasing steadily since 1970s, southern residents reached high of 98 individuals in 1995, but have since declined by 15% to 82 animals in 2000	increased vessel traffic, reduced food supply (e.g., chinook salmon), and high contaminant levels, very small pop. size and low potential rate of growth	key research areas include distribution and diet, pop. discreteness and viability, and contaminants; management priorities have yet to be established	research into genetics, contaminants, movements and critical habitats; acoustic monitoring of occurrence by interpretation of dialects; volunteer sightings network

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	MAMMALS			
17	**Whale, Right** [Atlantic and Pacific Oceans] *Eubalaena glacialis* Endangered (1980, 1985, 1990)	DFO	Jerry Conway, *DFO*, conwayj@mar.dfo-mpo.gc.ca, and Cathy Merriman, *WWF*, cmerriman@wwfcanada.org; Cathy replaced in 2001 by Moira Brown, mbrown@coastalstudies.org	recovery plan for North Atlantic Right Whale pop. was approved in 2000; an implementation team has formed to develop action plan
18	**Wolverine** [Eastern pop.] *Gulo gulo* Endangered (1989)	NF, QC	Clément Fortin, QC – *FAPAQ*, clement.fortin@fapaq.gouv.qc.ca	draft recovery plan is being finalized
	BIRDS			
19	**Chat, Western Yellow-breasted** [BC pop.] *Icteria virens auricollis* Threatened (1994) Endangered (2000)	CWS, BC	Christine Bishop, *CWS*, Christine.Bishop @ec.gc.ca	draft recovery strategy is under development, in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
20	**Crane, Whooping** *Grus americana* Endangered (1978, 2000)	CWS, Parks, SK, AB, MB, NWT – in cooperation with U.S.	Brian Johns, *CWS*, Brian.Johns@ec.gc.ca	1994 approved recovery plan is being updated as a joint Canadian/U.S. plan
21	**Curlew, Eskimo** *Numenius borealis* Endangered (1978, 2000)	CWS	Cheri Gratto-Trevor, *CWS*, Cheri.Gratto-Trevor@ec.gc.ca	development of a recovery plan is on hold
22	**Duck, Harlequin** [Eastern pop.] *Histrionicus histrionicus* Endangered (1990)	CWS, NF, NS, Parks	Bill Montevecchi, *Memorial University of NF (MUN)*, mont@morgan.ucs.mun.ca	recovery plan was approved in 1994
23	**Falcon, Anatum Peregrine** *Falco peregrinus anatum* Endangered (1978) Threatened (1999, 2000)	CWS; all provinces and territories except PEI; Parks	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	1987 approved recovery plan is being updated
24a	**Flycatcher, Acadian** *Empidonax virescens* Endangered (1994, 2000)	CWS, ON	Mike Cadman, *CWS*, mcadman@uoguelph.ca	joint recovery plan for Acadian Flycatcher and Hooded Warbler (see 24b) was published in Nov. 2000
25	**Grouse, Sage** [Prairie pop.] *Centrocercus urophasianus urophasianus* Threatened (1997) Endangered (1998, 2000)	SK, AB, Parks	Wayne Harris, *SK – Environment and Resource Management*, wayne.harris.erm@govmail.gov.sk.ca; Ken Lungle, *AB – Sustainable Resource Development*, Ken.Lungle@gov.ab.ca	recovery strategy has been drafted; action plan is in development; four recovery action groups have been formed

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
300-350 whales in North Atlantic; in 1980s Atlantic trend increased 2.5% per year, but recently decreasing; Pacific pop. is considered critically endangered	incidental collisions with vessels; entanglements in fishing gear; poor recruitment (due to degradation of habitat, changes in copepod prey distribution, toxic contamination, inbreeding...?)	interim goal of 1200 whales in North Atlantic; to reduce mortality/injury related to vessel strikes; reduce frequency/severity of entanglements in fishing gear; minimize disturbances from human activities; reduce exposure to chemical contamination, other habitat degradation; monitor pop.; conduct research	calving has been very poor for several years, but 30 calves were born in winter 2000-2001; code of ethics for whale-watching industry; consultation with the industry regarding ship traffic in Fundy; stewardship gear modification, sightings, rescue, education
< 50 wolverines in Quebec-Labrador	historically, hunting and trapping and starvation due to low prey numbers (caribou) led to the decline, now the pop. size is less than viable and individuals are widely dispersed	to reestablish a self-sustaining pop. of ≥ 100 wolverine in Quebec-Labrador, through release of individuals taken from other areas or captive-reared	a source of wild animals for reintroduction has been identified; the St-Félicien zoo is developing captive-rearing techniques for this species
< 50 pairs – declining	channeling of Okanagan river; conversion of riparian habitat to agriculture; destruction of remaining riparian habitat by cattle and horses	SOK: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	fencing of riparian habitat to keep cattle and horses out and to allow restoration of vegetation
180 cranes in Wood Buffalo National Park (WBNP) flock (51 nesting pairs) (2000) – 9 pairs successfully reached wintering grounds with single young each	small, localized breeding pop. in Canada; deteriorating winter habitat due to boat traffic, wave erosion and dredging; deteriorating breeding habitat due to drought	to establish 40 breeding pairs in WBNP for 10 years successively; to establish two other wild pops, each with ≥ 25 breeding pairs, by 2020 (a non-migratory flock in Florida and a migratory flock nesting in central Wisconsin), and teach these birds a new migratory route	captive breeding centres raised 30 cranes for release in 2000; for five consecutive years, > 40 pairs of cranes have bred in WBNP
may be extinct, but occasional reports of possible sightings	over-harvesting triggered decline, then other factors contributed to demise	on hold pending confirmation species still living	status report was updated in 1999; check out reports of potential sightings
1200-1500 birds in Eastern Canada (1998)	habitat loss and degradation due to hydroelectric and other natural resource development; oil pollution at sea; disturbance from ecotourism, military low-level flying; accidental hunting	to increase the wintering pop. in eastern Canada to ≥ 2000 individuals at least 3-5 consecutive years by the year 2005, and to ≥ 3000 individuals (with at least 1000 being females of breeding age) by 2010	increased understanding of: pop. size, genetics, demographics, movements and distribution; habitat use and requirements; and factors limiting pop. growth
400 pairs in NWT and YT; 162 pairs known across southern Canada (2000) – trend appears stable in northwestern Canada, increasing in southern Canada	pesticide use throughout migratory range; small pop. in southern Canada; little protection at nest sites; limited protection for prey habitats	1987 recovery plan goal and objectives have been met	conducted a five-year national survey of anatum peregrines in 2000; revised status report for the reassessment of the anatum peregrine by COSEWIC in 2002
20-30 pairs (2000) – trend appears to be stable	drastic reduction of habitat due to agricultural and other development throughout the Canadian range	to prevent any decline of the existing pop.; to increase the breeding pop. to 250 pairs, with multiple pairs established in ≥ 15 separate core areas	new sites and nests found as a result of surveys; better information on nesting productivity and habitat use; acquisition of core breeding sites; public outreach
AB: ~ 480 (108 males at 8 active leks) (2001); SK: ~ 550 (124 males at 11 active leks) (2000); 1995-1999 average was 97 males	low adult survival and low recruitment of young; small pop. size; conversion of millions of acres of habitat to agricultural land; heavy grazing; oil and gas development, especially near leks	to protect, secure, and enhance critical habitat in AB and SK; to maintain a stable or increasing pop. with ≥ 365 males in the spring in AB and 500 males in the spring in SK; and to maintain active lek (mating grounds) numbers ≥ 16 in AB and ≥ 30 in SK	intensive pop. surveys continue; Protective Notations (land reservations) have been placed on all sage grouse lek sites in AB to ensure industrial development does not occur near lek sites

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
MAMMALS			
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BIRDS			
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20 **Crane, Whooping** *Grus americana* Endangered (1978, 2000)	CWS, Parks, SK, AB, MB, NWT – in cooperation with U.S.	Brian Johns, *CWS*, Brian.Johns@ec.gc.ca	1994 approved recovery plan is being updated as a joint Canadian/U.S. plan
21 **Curlew, Eskimo** *Numenius borealis* Endangered (1978, 2000)	CWS	Cheri Gratto-Trevor, *CWS*, Cheri.Gratto-Trevor@ec.gc.ca	development of a recovery plan is on hold
22 **Duck, Harlequin** (Eastern pop.) *Histrionicus histrionicus* Endangered (1990)	CWS, NF, NS, Parks	Bill Montevecchi, *Memorial University of NF (MUN)*, mont@morgan.ucs.mun.ca	recovery plan was approved in 1994
23 **Falcon, Anatum Peregrine** *Falco peregrinus anatum* Endangered (1978) Threatened (1999, 2000)	CWS, all provinces and territories except PEI, Parks	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	1987 approved recovery plan is being updated
24a **Flycatcher, Acadian** *Empidonax virescens* Endangered (1994, 2000)	CWS, ON	Mike Cadman, *CWS*, mcadman@uoguelph.ca	joint recovery plan for Acadian Flycatcher and Hooded Warbler (see 24b) was published in Nov. 2000
25 **Grouse, Sage** (Prairie pop.) *Centrocercus urophasianus urophasianus* Threatened (1997) Endangered (1998, 2000)	SK, AB, Parks	Wayne Harris, *SK – Environment and Resource Management*, wayne.harris.ernt@govmail.gov.sk.ca; Ken Lungle, *AB – Sustainable Resource Development*, Ken.Lungle@gov.ab.ca	recovery strategy has been drafted, action plan is in development, four recovery action groups have been formed

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
300-350 whales in North Atlantic; in 1980s Atlantic trend increased 2.5% per year, but recently decreasing. Pacific pop. is considered critically endangered	incidental collisions with vessels; entanglements in fishing gear; poor recruitment (due to degradation of habitat, changes in copepod prey distribution, toxic contamination, inbreeding ?)	interim goal of 1200 whales in North Atlantic; to reduce mortality/injury related to vessel strikes; reduce frequency/severity of entanglements in fishing gear; minimize disturbances from human activities; reduce exposure to chemical contamination, other habitat degradation; monitor pop.; conduct research	calving has been very poor for several years, but 30 calves were born in winter 2000-2001; code of ethics for whale-watching industry; consultation with the industry regarding ship traffic in Fundy; stewardship gear modification; sightings; rescue; education
< 50 wolverines in Quebec-Labrador	historically, hunting and trapping and starvation due to low prey numbers (caribou) led to the decline; now the pop. size is less than viable and individuals are widely dispersed	to reestablish a self-sustaining pop. of ≥ 100 wolverine in Quebec-Labrador, through release of individuals taken from other areas or captive-reared	a source of wild animals for reintroduction has been identified; the St-Félicien zoo is developing captive-rearing techniques for this species
< 50 pairs – declining	channeling of Okanagan river; conversion of riparian habitat to agriculture; destruction of remaining riparian habitat by cattle and horses	SOK: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	fencing of riparian habitat to keep cattle and horses out and to allow restoration of vegetation
180 cranes in Wood Buffalo National Park (WBNP) flock (51 nesting pairs) (2000) – 9 pairs successfully reached wintering grounds with single young each	small, localized breeding pop. in Canada; deteriorating winter habitat due to boat traffic, wave erosion and dredging; deteriorating breeding habitat due to drought	to establish 40 breeding pairs in WBNP for 10 years successively; to establish two other wild pops each with ≥ 25 breeding pairs by 2020 (a non-migratory flock in Florida and a migratory flock nesting in central Wisconsin), and teach these birds a new migratory route	captive breeding centres raised 30 cranes for release in 2000; for five consecutive years, > 40 pairs of cranes have bred in WBNP
may be extinct, but occasional reports of possible sightings	over-harvesting triggered decline then other factors contributed to demise	on hold pending confirmation species still living	status report was updated in 1999; check out reports of potential sightings
1200-1500 birds in Eastern Canada (1998)	habitat loss and degradation due to hydroelectric and other natural resource development; oil pollution at sea; disturbance from ecotourism; military low-level flying; accidental hunting	to increase the wintering pop. in eastern Canada to ≥ 2000 individuals at least 3-5 consecutive years by the year 2005, and to ≥ 3000 individuals (with at least 1000 being females of breeding age) by 2010	increased understanding of: pop. size, genetics, demographics, movements and distribution; habitat use and requirements; and factors limiting pop. growth
400 pairs in NWT and YT 162 pairs known across southern Canada (2000) – trend appears stable in northwestern Canada, increasing in southern Canada	pesticide use throughout migratory range; small pop. in southern Canada; little protection at nest sites; limited protection for prey habitats	1987 recovery plan goal and objectives have been met	conducted a five-year national survey of anatum peregrines in 2000; revised status report for the reassessment of the anatum peregrine by COSEWIC in 2002
20-30 pairs (2000) – trend appears to be stable	drastic reduction of habitat due to agricultural and other development throughout the Canadian range	to prevent any decline of the existing pop.; to increase the breeding pop. to 250 pairs, with multiple pairs established in ≥ 15 separate core areas	new sites and nests found as a result of surveys; better information on nesting productivity and habitat use; acquisition of core breeding sites; public outreach
AB – 480 (108 males at 8 active leks) (2001); SK – 550 (124 males at 11 active leks) (2000); 1995-1999 average was 97 males	low adult survival and low recruitment of young; small pop. size; conversion of millions of acres of habitat to agricultural land; heavy grazing; oil and gas development, especially near leks	to protect, secure, and enhance critical habitat in AB and SK; to maintain a stable or increasing pop. with ≥ 365 males in the spring in AB and 500 males in the spring in SK; and to maintain active lek (mating grounds) numbers ≥ 16 in AB and ≥ 30 in SK	intensive pop. surveys continue; Protective Notations (land reservations) have been placed on all sage grouse lek sites in AB to ensure industrial development does not occur near lek sites

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	BIRDS			
26	**Murrelet, Marbled** *Brachyramphus marmoratus* Threatened (1990, 2000)	**CWS**, BC, Parks	Doug Bertram, *CWS*, bertramd@pac.dfo-mpo.gc.ca@ec.gc.ca	1993 approved recovery plan is being updated
27	**Owl, Barn** [Eastern pop.] *Tyto alba* Endangered (1999, 2000)	**ON**, (QC)	Dave Richards, *ON – Ministry of Natural Resources (ON – MNR)*, dave.richards @mnr.gov.on.ca; Bernie Solymar, *Earth Tramper Consulting*, solymar@nornet.on.ca	provincial recovery plan for ON was published 1998; updating of the plan is underway under the RENEW process
28	**Owl, Burrowing** *Speotyto cunicularia* Threatened (1978 and 1991) Endangered (1995, 2000)	MB, SK, AB, BC, CWS, Parks	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	recovery plan was approved in 1995; update is planned for 2001-2002
29	**Owl, Northern Spotted** *Strix occidentalis caurina* Endangered (1986, 1999, 2000)	**BC**	Ian Blackburn, *BC – MWLAP* ian.blackburn@gems1.gov.bc.ca	management plan has been developed, which does not meet the requirements of a recovery plan
30	**Plover, Piping** *Charadrius melodus* Threatened (1978) Endangered (1985)	**CWS**, Parks, PEI, NF, NS, NB, QC, ON, MB, SK, AB – in cooperation with U.S.	Atlantic: Diane Amirault, *CWS*, Diane.Amirault@ec.gc.ca; Prairie: Paul Goossen, *CWS*, Paul.Goossen@ec.gc.ca	first plan was approved in 1989; updated plan was conditionally approved in 2001 and is now being revised
31	**Rail, King** *Rallus elegans* Vulnerable (1985) Endangered (1994, 2000)	**CWS**, ON	Laurie Maynard, CWS, Laurie.Maynard@ec.gc.ca	in 1999 a recovery plan was approved by CWS and conditionally approved by ON; a revision is now nearing completion

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
30,000 (1999)	loss and degradation of old-growth forest habitat; bycatch mortalities in gill and seine nets; oil spills	to ensure that effective and timely action is taken to protect the species by reducing threats to their nesting habitat and reducing the risks faced by the birds when at sea	interim habitat protection measures in place for known nest sites; nesting density study completed; reserve planning in four planning units; assessment of remaining productive old-growth forest as nesting habitat for murrelets
4-6 pairs in ON (1987); 2 confirmed sightings in 2000 – has never been widespread or common in Ontario; considered a rare visitor to Quebec	loss of grassland foraging habitat primarily through the conversion of pastures to row crops	to establish a wild breeding pop. of ≥ 20 pairs in SW Ontario by end of 2003; to create ≥ 1000 ha of rough grassland habitat during the same time period that will benefit barn owls and other grasslands-dependent birds; to carry out recovery of the species in cooperation with community groups	strong community involvement; 300 nest boxes erected and monitored in SW ON (no breeding pairs identified); 8400 grassland habitat posters produced and distributed; annual newsletter produced and distributed
< 1000 breeding pairs in AB and SK (1995); extirpated in MB and BC – average rate of decline over past decade is -22% per year	low productivity due to limited food supply; high summer mortality; limited information on migration and winter ecology	to reverse declining pop. trends on the prairies and maintain a stable or increasing pop. averaging > 3000 pairs for 10 years; to establish a viable pop. in B.C. and maintain it at an ave. of > 50 pairs for 10 years	good support from landowners; strong stewardship programs in place; major wintering grounds discovered in central and coastal Mexico
~100 pairs (1998) – declining	loss of old growth forest habitat due to timber harvesting; predation by great horned owls; competition with barred owls; toxic pollution resulting in thinned eggshells	to stabilize and improve the pop. status within the next 100 years; to maintain/restore a minimum of 67% of the gross forested area as suitable habitat within 19 SRM Zones; within the 67% area, to allow for partial timber harvest; within the remaining 33% of the area, allow for clear-cut harvest; allow for adaptive management	inventories have improved knowledge of bird's distribution and abundance; loss of habitat continues
Atlantic: ~459 adults (2000); Prairie: 1687 adults (1996) – comparison of 1991 and 1996 census data: Atl. pop. declined; Cdn Prairie portion of Northern Great Plains pop. increased, but overall this pop. declined	threats to habitat and reproductive success, including human disturbance, artificial water levels, natural beach succession, and unnatural increases in predator numbers	to prevent further pop. decline; to maintain a self-sustaining pop. of ≥ 1626 adults in the prairie pop.; to increase the Atl. pop. to 670 adults; to evaluate other pop. goals in conjunction with habitat carrying capacity analysis; to establish and work towards achieving habitat protection goals	although increase observed in 1999 was not sustained, Atlantic Canada pop. appears to be stabilizing; productivity at Lake Diefenbaker, SK, was higher than usual in 2000; nest exclosures in AB increased hatching success; species was listed as Endangered by AB
~ 50 pairs (1998) – was possibly never common in Canada, but major declines have occurred	habitat loss and degradation due to activities such as draining, filling and dredging; very low pop. size	to prevent any decline of the existing pop.; to increase the breeding pop. to 250 well-established pairs which are breeding regularly in ≥10 separate wetlands	surveys and traditional ecological knowledge have improved knowledge of bird's distribution and abundance; survey protocol has been established; birds have been confirmed in inland wetlands and wetlands on Georgian Bay; species is benefiting from "Wetland Trends Through Time" and other wetlands conservation projects; stewardship options, fact sheet and communications products are in development

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	BIRDS			
26	**Murrelet, Marbled** *Brachyramphus marmoratus* Threatened (1990, 2000)	**CWS**, BC, Parks	Doug Bertram, *CWS*, bertramd@pac.dfo-mpo.gc.ca@ec.gc.ca	1993 approved recovery plan is being updated
27	**Owl, Barn** [Eastern pop.] *Tyto alba* Endangered (1999, 2000)	**ON**, (QC)	Dave Richards, *ON – Ministry of Natural Resources (ON – MNR)*, dave.richards @mnr.gov.on.ca; Bernie Solymar, *Earth Tramper Consulting*, solymar@nornet.on.ca	provincial recovery plan for ON was published 1998; updating of the plan is underway under the RENEW process
28	**Owl, Burrowing** *Speotyto cunicularia* Threatened (1978 and 1991) Endangered (1995, 2000)	MB, SK, AB, BC, CWS, Parks	Geoff Holroyd, *CWS*, Geoffrey.Holroyd@ec.gc.ca	recovery plan was approved in 1995; update is planned for 2001-2002
29	**Owl, Northern Spotted** *Strix occidentalis caurina* Endangered (1986, 1999, 2000)	**BC**	Ian Blackburn, *BC – MWLAP* ian.blackburn@gems1.gov.bc.ca	management plan has been developed, which does not meet the requirements of a recovery plan
30	**Plover, Piping** *Charadrius melodus* Threatened (1978) Endangered (1985)	**CWS**, Parks, PEI, NF, NS, NB, QC, ON, MB, SK, AB – in cooperation with U.S.	Atlantic: Diane Amirault, *CWS*, Diane.Amirault@ec.gc.ca; Prairie: Paul Goossen, *CWS*, Paul.Goossen@ec.gc.ca	first plan was approved in 1989; updated plan was conditionally approved in 2001 and is now being revised
31	**Rail, King** *Rallus elegans* Vulnerable (1985) Endangered (1994, 2000)	**CWS**, ON	Laurie Maynard, CWS, Laurie.Maynard@ec.gc.ca	in 1999 a recovery plan was approved by CWS and conditionally approved by ON; a revision is now nearing completion

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
30,000 (1999)	loss and degradation of old-growth forest habitat; bycatch mortalities in gill and seine nets; oil spills	to ensure that effective and timely action is taken to protect the species by reducing threats to their nesting habitat and reducing the risks faced by the birds when at sea	interim habitat protection measures in place for known nest sites; nesting density study completed; reserve planning in four planning units; assessment of remaining productive old-growth forest as nesting habitat for murrelets
4-6 pairs in ON (1987); 2 confirmed sightings in 2000 – has never been widespread or common in Ontario; considered a rare visitor to Quebec	loss of grassland foraging habitat primarily through the conversion of pastures to row crops	to establish a wild breeding pop. of ≥ 20 pairs in SW Ontario by end of 2003; to create ≥ 1000 ha of rough grassland habitat during the same time period that will benefit barn owls and other grasslands-dependent birds; to carry out recovery of the species in cooperation with community groups	strong community involvement; 300 nest boxes erected and monitored in SW ON (no breeding pairs identified); 8400 grassland habitat posters produced and distributed; annual newsletter produced and distributed
< 1000 breeding pairs in AB and SK (1995); extirpated in MB and BC – average rate of decline over past decade is -22% per year	low productivity due to limited food supply; high summer mortality; limited information on migration and winter ecology	to reverse declining pop. trends on the prairies and maintain a stable or increasing pop. averaging > 3000 pairs for 10 years; to establish a viable pop. in B.C. and maintain it at an ave. of > 50 pairs for 10 years	good support from landowners; strong stewardship programs in place; major wintering grounds discovered in central and coastal Mexico
~100 pairs (1998) – declining	loss of old growth forest habitat due to timber harvesting; predation by great horned owls; competition with barred owls; toxic pollution resulting in thinned eggshells	to stabilize and improve the pop. status within the next 100 years; to maintain/restore a minimum of 67% of the gross forested area as suitable habitat within 19 SRM Zones; within the 67% area, to allow for partial timber harvest; within the remaining 33% of the area, allow for clear-cut harvest; allow for adaptive management	inventories have improved knowledge of bird's distribution and abundance; loss of habitat continues
Atlantic: ~459 adults (2000); Prairie: 1687 adults (1996) – comparison of 1991 and 1996 census data: Atl. pop. declined; Cdn Prairie portion of Northern Great Plains pop. increased, but overall this pop. declined	threats to habitat and reproductive success, including human disturbance, artificial water levels, natural beach succession, and unnatural increases in predator numbers	to prevent further pop. decline; to maintain a self-sustaining pop. of ≥ 1626 adults in the prairie pop.; to increase the Atl. pop. to 670 adults; to evaluate other pop. goals in conjunction with habitat carrying capacity analysis; to establish and work towards achieving habitat protection goals	although increase observed in 1999 was not sustained, Atlantic Canada pop. appears to be stabilizing; productivity at Lake Diefenbaker, SK, was higher than usual in 2000; nest exclosures in AB increased hatching success; species was listed as Endangered by AB
~ 50 pairs (1998) – was possibly never common in Canada, but major declines have occurred	habitat loss and degradation due to activities such as draining, filling and dredging; very low pop. size	to prevent any decline of the existing pop.; to increase the breeding pop. to 250 well-established pairs which are breeding regularly in ≥10 separate wetlands	surveys and traditional ecological knowledge have improved knowledge of bird's distribution and abundance; survey protocol has been established; birds have been confirmed in inland wetlands and wetlands on Georgian Bay; species is benefiting from "Wetland Trends Through Time" and other wetlands conservation projects; stewardship options, fact sheet and communications products are in development

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
BIRDS			
32 **Shrike, Eastern Loggerhead** *Lanius ludovicianus migrans* Endangered (1991, 2000)	CWS, QC, ON, MB	a) Robert Wenting, *CWS*, Robert.Wenting@ec.gc.ca	1994 approved recovery plan is being updated
33 **Shrike, Prairie Loggerhead** *Lanius ludovicianus excubitorides* Threatened (1986)	CWS, AB, SK, MB, Parks	Andrew Didiuk, *CWS*, Andrew.Didiuk@ec.gc.ca	1994 approved recovery plan needs updating
34 **Sparrow, Henslow's** *Ammodramus henslowii* Threatened (1984) Endangered (1993, 2000)	CWS, ON	Richard Pratt, *CWS*, Richard.Pratt@ec.gc.ca	recovery plan was approved in 1994
35 **Tern, Roseate** *Sterna dougalli* Threatened (1986) Endangered (1999)	CWS, QC, NB, NS	Sherman Boates, *NS – Natural Resources*, boatesjs@gov.ns.ca	1992 approved recovery plan is out of date; an updated recovery strategy (first part of plan) is being developed
36 **Thrasher, Sage** *Oreoscoptes montanus* Endangered (1992, 2000)	CWS, BC, AB, SK, Parks	Pam Krannitz, *CWS*, Pam.Krannitz@ec.gc.ca	draft recovery strategy is under development, in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
24b **Warbler, Hooded** *Wilsonia citrina* Threatened (1994, 2000)	CWS, ON	Mike Cadman, *CWS*, mcadman@uoguelph.ca	joint recovery plan for Acadian Flycatcher (see 24a) and Hooded Warbler was published in Nov. 2000
37 **Warbler, Kirtland's** *Dendroica kirlandii* Endangered (1979 and 1999)	CWS, ON	Richard Pratt, *CWS*, Richard.Pratt@ec.gc.ca	recovery plan was approved by CWS in Apr. 2000; awaiting approval by ON
38 **Warbler, Prothonotary** *Protonotaria citrea* Special Concern (1984) Endangered (1996, 2000)	CWS, ON, Parks	Jon McCracken, *Bird Studies Canada*, jmccracken@bsc-eoc.org	recovery plan was approved by CWS in Jan. 2000; awaiting approval by ON
39 **Woodpecker, White-headed** *Picoides albolarvatus* Threatened (1992) Endangered (2000)	CWS, BC	Pam Krannitz, *CWS*, Pam.Krannitz@ec.gc.ca	draft recovery strategy is under development, in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
AMPHIBIANS			
40 **Frog, Northern Cricket** *Acris crepitans* Endangered (1990)	ON	contacts are Bob Johnson, *Toronto Zoo*, bjohnson@zoo.metrotor.on.ca; Mike Oldham, *ON – MNR*, michael.oldham@mnr.gov.on.ca	recovery plan was approved in 1997

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
38 breeding pairs in five widely-separated areas in ON + 11 breeding pairs in one location in SE MB (2000) – declining	habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination	to prevent further pop. decline; to establish a stable or increasing breeding pop. in ON, QC, and eastern MB with a combined pop. of ≥ 1000 adults	captive breeding is on hold (100 birds in captivity); captive mgmt strategy has been developed; stewardship program is in place; experimental field propagation and release project is underway in one core area; a marketing and communications strategy is being implemented; 1994
300 pairs in MB, 7000 pairs in SK, 2500 pairs in a third of the AB range (2000) – possibly stable in S AB and SW SK; possibly declining in SE SK; apparently declining in SW MB	habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination; increased human disturbance	to prevent further pop. decline	recovery plan is being evaluated efforts are underway to identify the causes of pop. decline in breeding and wintering areas, and to conserve and create nesting habitat
2-3 pairs	loss of wintering habitat in U.S.; loss of breeding habitat; vulnerability of small pop. inhabiting an isolated area	to establish a stable or increasing breeding pop. of 500 adults distributed in different colonies across ON (e.g., 50 colonies with ≥10 birds in each)	birds may be emigrating to southern ON from breeding pops in New York State and Pennsylvania
150 pairs (2000) – stable in Canada, increasing in U.S.	low pop. size; low reproductive success and survival of young due to predation by gulls; loss of habitat; human disturbance	to have 125 pairs breeding on Sable Island by 2010; to have ≥ 3 mainland colonies totaling 75 breeding pairs; to maintain the productivity of these colonies at ≥ 1 fledging per pair per year	record high pop. estimates were recorded at the two largest Canadian colonies in 2000: 86 pairs on The Brothers, 53 pairs on Country Island
6 to 20-30 individuals (2000); fluctuations may be due to episodic influx of second breeders from Washington State	loss of habitat due to agricultural and urban development; burning and clearing of sage; heavy grazing of sagebrush habitat; susceptibility to pesticides	SOSCP: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	establishment of monitoring stations; new protected areas with lower grazing use; control of weed invasion into shrub steppe areas
144-207 pairs (1998)	drastic reduction of habitat due to agricultural and other development throughout the Canadian range	to prevent any decline of the existing pop.; to increase the breeding pop. to 500 pairs, with multiple pairs established in at least 15 separate core areas	new sites and nests found as a result of surveys; better information on nesting productivity and habitat use; acquisition of core breeding sites; public outreach
last confirmed breeding record was in 1945; males are occasionally heard or seen; increasing in U.S. range (Michigan)	limited amount of early successional pine habitat	to determine whether there is a breeding pop. in Canada and, if so, to undertake activities to maintain or increase the pop.	surveys of potential habitat are ongoing
22 pairs + 8 unmated males (2000) – some signs of recovery (increase from 20 to 52 adults between 1996 and 2000)	nesting failure due to competition with house wrens and brood parasitism by brown-headed cowbirds; shortage of nesting cavities; destruction of habitat; drought in breeding habitat	to reverse the declining pop. trend and maintain a stable or increasing pop. averaging ≥ 100 pairs annually, in ≥ 6 geographically distinct nesting areas, each separated by a distance of ≥ 25 km, by 2001	nest box program is reducing cowbird parasitism and mammalian predation; over 80% of the Canadian pop. is now nesting in nest boxes; information pamphlet produced
1-2 birds sighted per year	habitat modification due to logging, residential development, fire suppression, firewood harvesting; vulnerability of small pop. size, restricted niche	SOSCP: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	habitat restoration is underway to create habitat attributes that would promote breeding and overwintering (e.g., logging small trees and leaving large ones and snags); much preferred habitat is now protected within provincial parks
extirpated at Point Pelee (last record in 1920); disappearing from the other Canadian location on Pelee Island	loss of wetland to development; susceptibility to agricultural runoff of pesticides and fertilizers	to establish self-sustaining pops at several locations within former range in ON	new recovery team is forming; successful captive breeding of frogs obtained from Ohio; genetic research is underway

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	BIRDS			
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34	**Sparrow, Henslow's** *Ammodramus henslowii* Threatened (1984) Endangered (1993, 2000)	CWS, ON	Richard Pratt, CWS Richard.Pratt@ec.gc.ca	recovery plan was approved in 1994
35	**Tern, Roseate** *Sterna dougallii* Threatened (1986) Endangered (1999)	CWS, QC, NB, NS	Sherman Boates, *NS – Natural Resources*, boatesjs@gov.ns.ca	1992 approved recovery plan is out of date; an updated recovery strategy (first part of plan) is being developed
36	**Thrasher, Sage** *Oreoscoptes montanus* Endangered (1992, 2000)	CWS, BC, AB, SK, Parks	Pam Krannitz, CWS Pam.Krannitz@ec.gc.ca	draft recovery strategy is under development in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
24b	**Warbler, Hooded** *Wilsonia citrina* Threatened (1994, 2000)	CWS, ON	Mike Cadman, CWS, mcadman@uoguelph.ca	joint recovery plan for Acadian Flycatcher (see 24a) and Hooded Warbler was published in Nov. 2000
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38	**Warbler, Prothonotary** *Protonotaria citrea* Special Concern (1984) Endangered (1996, 2000)	CWS, ON, Parks	Jon McCracken, *Bird Studies Canada*, jmccracken@bsc-eoc.org	recovery plan was approved by CWS in Jan. 2000, awaiting approval by ON
39	**Woodpecker, White-headed** *Picoides albolarvatus* Threatened (1992) Endangered (2000)	CWS, BC	Pam Krannitz, CWS Pam.Krannitz@ec.gc.ca	draft recovery strategy is under development in cooperation with the South Okanagan-Similkameen Conservation Program (SOSCP)
	AMPHIBIANS			
40	**Frog, Northern Cricket** *Acris crepitans* Endangered (1990)	ON	contacts are Bob Johnson, *Toronto Zoo*, bjohnson@zoo.metrotor.on.ca; Mike Oldham, *ON – MNR*, michael.oldham@mnr.gov.on.ca	recovery plan was approved in 1997

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
38 breeding pairs in five widely-separated areas in ON + 11 breeding pairs in one location in SE MB (2000) – declining	habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination	to prevent further pop. decline; to establish a stable or increasing breeding pop. in ON, QC, and eastern MB with a combined pop. of ≥ 1000 adults	captive breeding is on hold (100 birds in captivity); captive mgmt strategy has been developed; stewardship program is in place; experimental field propagation and release project is underway in one core area; a marketing and communications strategy is being implemented; 1994
300 pairs in MB, 7000 pairs in SK, 2500 pairs in a third of the AB range (2000) – possibly stable in S AB and SW SK; possibly declining in SE SK; apparently declining in SW MB	habitat loss and degradation; changes in agricultural practices that impact on short grass habitat; collisions with vehicles; pesticide contamination; increased human disturbance	to prevent further pop. decline	recovery plan is being evaluated; efforts are underway to identify the causes of pop. decline in breeding and wintering areas, and to conserve and create nesting habitat
2-3 pairs	loss of wintering habitat in U.S.; loss of breeding habitat; vulnerability of small pop. inhabiting an isolated area	to establish a stable or increasing breeding pop. of 500 adults distributed in different colonies across ON (e.g., 50 colonies with ≥10 birds in each)	birds may be emigrating to southern ON from breeding pops in New York State and Pennsylvania
150 pairs (2000) – stable in Canada, increasing in U.S.	low pop. size; low reproductive success and survival of young due to predation by gulls; loss of habitat; human disturbance	to have 125 pairs breeding on Sable Island by 2010; to have ≥ 3 mainland colonies totaling 75 breeding pairs; to maintain the productivity of these colonies at ≥ 1 fledging per pair per year	record high pop. estimates were recorded at the two largest Canadian colonies in 2000: 86 pairs on The Brothers, 53 pairs on Country Island
6 to 20-30 individuals (2000); fluctuations may be due to episodic influx of second breeders from Washington State	loss of habitat due to agricultural and urban development, burning and clearing of sage; heavy grazing of sagebrush habitat; susceptibility to pesticides	SOSCP: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	establishment of monitoring stations; new protected areas with lower grazing use; control of weed invasion into shrub steppe areas
144-207 pairs (1998)	drastic reduction of habitat due to agricultural and other development throughout the Canadian range	to prevent any decline of the existing pop.; to increase the breeding pop. to 500 pairs, with multiple pairs established in at least 15 separate core areas	new sites and nests found as a result of surveys; better information on nesting productivity and habitat use; acquisition of core breeding sites; public outreach
last confirmed breeding record was in 1945; males are occasionally heard or seen; increasing in U.S. range (Michigan)	limited amount of early successional pine habitat	to determine whether there is a breeding pop. in Canada and if so, to undertake activities to maintain or increase the pop.	surveys of potential habitat are ongoing
22 pairs + 8 unmated males (2000) – some signs of recovery (increase from 20 to 52 adults between 1996 and 2000)	nesting failure due to competition with house wrens and brood parasitism by brown-headed cowbirds; shortage of nesting cavities; destruction of habitat; drought in breeding habitat	to reverse the declining pop. trend and maintain a stable or increasing pop. averaging ≥ 100 pairs annually, in ≥ 6 geographically distinct nesting areas, each separated by a distance of ≥ 25 km, by 2001	nest box program is reducing cowbird parasitism and mammalian predation; over 80% of the Canadian pop. is now nesting in nest boxes; information pamphlet produced
1-2 birds sighted per year	habitat modification due to logging, residential development, fire suppression, firewood harvesting; vulnerability of small pop. size; restricted niche	SOSCP: to negotiate acquisition of key habitats; to promote ecologically sustainable land use; to promote stewardship	habitat restoration is underway to create habitat attributes that would promote breeding and overwintering (e.g., logging small trees and leaving large ones and snags); much preferred habitat is now protected within provincial parks
extirpated at Point Pelee (last record in 1920); disappearing from the other Canadian location on Pelee Island	loss of wetland to development; susceptibility to agricultural runoff of pesticides and fertilizers	to establish self-sustaining pops at several locations within former range in ON	new recovery team is forming; successful captive breeding of frogs obtained from Ohio; genetic research is underway

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
AMPHIBIANS			
41 **Frog, Northern Leopard** [Southern Mountain pop.] *Rana pipiens* Endangered (1998, 2000)	BC	Doug Adama, *Columbia Basin F&G Comp. Program*, adama@rockies.net; David Cunnington, *BC – MWLAP*, David.Cunnington@gems5.gov.bc.ca	recovery plan is in development
42 **Frog, Oregon Spotted** *Rana pretiosa* Endangered (1999)	BC, CWS (DND lands)	Russ Haycock, *Hyla Environmental Services Ltd.*, rhaycock@hyla.ca; John Richardson, *University of British Columbia*, jrichard@interchange.ubc.ca	recovery plan is in draft
REPTILES			
43 **Racer, Blue** *Coluber constrictor foxii* Endangered (1991)	ON	Dawn Burke, *ON – MNR*, dawn.burke@mnr.gov.on.ca	recovery plan in draft
44 **Rattlesnake, Eastern Massasauga** *Sistrurus catenatus catenatus* Threatened (1991)	ON, Parks	Darlene Upton, *Parks*, darlene_upton@pch.gc.ca	recovery plan is being revised and will be submitted for approval in 2001
45 **Snake, Black Rat** *Elaphe obsoleta obsoleta* Threatened (1998, 2000)	ON, Parks	Shaun Thompson, *ON – MNR*, shaun.thompson@mnr.gov.on.ca	draft recovery plan is nearing completion
46 **Turtle, Blanding's** [NS pop.] *Emydoidea blandingi* Threatened (1993)	NS, Parks	Tom Herman, *Acadia University*, tom.herman@acadiau.ca	recovery plan was approved in 1998
47 **Turtle, Leatherback** *Dermochelys coriacea* Endangered (1981)	DFO	Jerry Conway, *DFO*, ConwayJ@mar.dfo-mpo.gc.ca	development of a plan is scheduled to begin in 2002-2003

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
– a thorough search found only 16 egg masses in 2000, indicating the breeding pop. is extremely small – trend appears to be increasing	loss and degradation of wetland habitat; introduction of game fish; pesticide use; disease; increased ultraviolet radiation due to thinning ozone layer	to be determined	monitoring of the pop. and limited research on movements and habitat use are underway
350 frogs (2000)	very small pop. size; fragmented habitat; loss of ephemeral wetlands; habitat degradation by invasive grass species; predation by introduced bullfrog; contamination from agricultural run-off	to monitor, protect, maintain the status of existing pops; to monitor, protect and manage habitat; to survey for new sites, establish self-sustaining pops; to conduct research (e.g., husbandry techniques); communications and outreach	in Agassiz, 4000 m^2 of egg laying habitat were mitigated and 3000 m^2 created; identified potential habitat in Fraser River Lowlands; completed experimental release of 400 juveniles, began study of seasonal habitat use with telemetry
205 adults (1995)	habitat loss due to increased commercial residential and cottage development; continued road kill and loss of breeding sites; low numbers	to protect and maintain the snake on Pelee Island and achieve a minimum of 1 other demonstrably secure pop. on the ON mainland	efforts underway to gather recent pop. estimates, identify where critical habitat exists, work towards restoration/improvement of habitat, and to document the absence of the snake from the west side of Pelee Island
250 in Killbear Provincial Park, and probably <100 in each of Ojibway and Wainfleet pops (1998)	loss of habitat to development (Ojibway pop.), natural succession (Wainfleet); pop. isolation and reduction due to habitat fragmentation; road kills; persecution by humans	to achieve viable tall-grass prairie and peatland pops of massasaugas; to retain the current distribution, connectivity among local pops throughout the Bruce Peninsula and Georgian Bay regions	assessment of movements, habitat use; protecting habitat through stewardship agreements; production of snake identification guide and posters; reached > 2000 students in school workshops; held community workshops (~150 landowners contacted); restored 28.5 ha and enhanced 237 ha of habitat
not available	habitat loss and degradation; road mortality; persecution by humans	interim goals: – for Frontenac Axis pop.: to retain the current distribution and connectivity among extant pops in this region – for the Carolinian pop.: to achieve self-sustaining level, with no further local extinctions, to restore connectivity between currently isolated pops	movement patterns, habitat use and pop. ecology of the snake are better understood; development of a brochure for public information; land owner contact and formation of a volunteer community group; new hibernacula discovered on private land
~ 130 adults in Kejimkujik Park, 49 adults have been observed outside the park since 1995	short incubation season in NS, with threat of nest flooding; predation of eggs and young by raccoons	to determine habitat availability / requirements; to protect and manage the species' habitat; to better understand the species' life history and distribution; to stabilize age structure through increased recruitment	nesting sites have been found outside the park; volunteer nest monitoring program in place; nest-screening to increase hatchling survivorship; better delineation of habitats; genetic evidence suggests there are ≥ 2 discrete NS pops
(global estimates) – Pacific Ocean: now considered critically endangered – Atlantic Ocean: ~15,000 females	in Canadian waters: ingestion of plastic and other debris mistaken for prey; incidental capture in fisheries gear; outside Canadian waters: loss of eggs to humans and predators; development and illumination of nesting beaches; incidental capture in fisheries gear	to be determined	community-based marine turtle sighting network has grown to include 334 commercial fishers and 38 whale watch operators in NS; cooperative actions with US have been initiated; educational materials have been produced; satellite telemetry has documented movements of leatherbacks from Atlantic Canada to waters off Antilles and South America

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
AMPHIBIANS			
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REPTILES			
43 **Racer, Blue** *Coluber constrictor foxii* Endangered (1991)	ON	Dawn Burke, *ON – MNR*, dawn.burke@mnr.gov.on.ca	recovery plan in draft
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45 **Snake, Black Rat** *Elaphe obsoleta obsoleta* Threatened (1998, 2000)	ON, Parks	Shaun Thompson, *ON – MNR*, shaun.thompson@mnr.gov.on.ca	draft recovery plan is nearing completion
46 **Turtle, Blanding's** [NS pop.] *Emydoidea blandingi* Threatened (1993)	NS, Parks	Tom Herman, *Acadia University*, tom.herman@acadiau.ca	recovery plan was approved in 1998
47 **Turtle, Leatherback** *Dermochelys coriacea* Endangered (1981)	DFO	Jerry Conway, *DFO*, ConwayJ@mar.dfo-mpo.gc.ca	development of a plan is scheduled to begin in 2002-2003

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– a thorough search found only 16 egg masses in 2000, indicating the breeding pop. is extremely small – trend appears to be increasing	loss and degradation of wetland habitat; introduction of game fish; pesticide use; disease; increased ultraviolet radiation due to thinning ozone layer	to be determined	monitoring of the pop. and limited research on movements and habitat use are underway
350 frogs (2000)	very small pop. size; fragmented habitat; loss of ephemeral wetlands; habitat degradation by invasive grass species; predation by introduced bullfrog; contamination from agricultural run-off	to monitor, protect, maintain the status of existing pops; to monitor, protect and manage habitat; to survey for new sites, establish self-sustaining pops; to conduct research (e.g., husbandry techniques); communications and outreach	in Agassiz, 4000 m^2 of egg laying habitat were mitigated and 3000 m^2 created; identified potential habitat in Fraser River Lowlands; completed experimental release of 400 juveniles; began study of seasonal habitat use with telemetry
205 adults (1995)	habitat loss due to increased commercial residential and cottage development, continued road kill and loss of breeding sites, low numbers	to protect and maintain the snake on Pelee Island and achieve a minimum of 1 other demonstrably secure pop. on the ON mainland	efforts underway to gather recent pop. estimates, identify where critical habitat exists, work towards restoration/improvement of habitat, and to document the absence of the snake from the west side of Pelee Island
250 in Killbear Provincial Park, and probably <100 in each of Ojibway and Wainfleet pops (1998)	loss of habitat to development (Ojibway pop.), natural succession (Wainfleet); pop. isolation and reduction due to habitat fragmentation; road kills; persecution by humans	to achieve viable tall-grass prairie and peatland pops of massasaugas; to retain the current distribution, connectivity among local pops throughout the Bruce Peninsula and Georgian Bay regions	assessment of movements, habitat use; protecting habitat through stewardship agreements; production of snake identification guide and posters; reached > 2000 students in school workshops; held community workshops (~150 landowners contacted); restored 28.5 ha and enhanced 237 ha of habitat
not available	habitat loss and degradation, road mortality, persecution by humans	interim goals: – for Frontenac Axis pop.: to retain the current distribution and connectivity among extant pops in this region – for the Carolinian pop.: to achieve self-sustaining level, with no further local extinctions, to restore connectivity between currently isolated pops	movement patterns, habitat use and pop. ecology of the snake are better understood; development of a brochure for public information, land owner contact and formation of a volunteer community group; new hibernacula discovered on private land
~ 130 adults in Kejimkujik Park, 49 adults have been observed outside the park since 1995	short incubation season in NS, with threat of nest flooding; predation of eggs and young by raccoons	to determine habitat availability / requirements; to protect and manage the species' habitat; to better understand the species' life history and distribution; to stabilize age structure through increased recruitment	nesting sites have been found outside the park; volunteer nest monitoring program in place; nest-screening to increase hatchling survivorship; better delineation of habitats; genetic evidence suggests there are ≥ 2 discrete NS pops
(global estimates) – Pacific Ocean: now considered critically endangered – Atlantic Ocean: ~15,000 females	in Canadian waters: ingestion of plastic and other debris mistaken for prey; incidental capture in fisheries gear; outside Canadian waters: loss of eggs to humans and predators; development and illumination of nesting beaches; incidental capture in fisheries gear	to be determined	community-based marine turtle sighting network has grown to include 334 commercial fishers and 38 whale watch operators in NS; cooperative actions with US have been initiated; educational materials have been produced; satellite telemetry has documented movements of leatherbacks from Atlantic Canada to waters off Antilles and South America

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
REPTILES			
48 **Turtle, Spiny Softshell** *Apalone spinifera* Threatened (1991)	ON, QC	*ON*: Scott Gillingwater, indotestudo@yahoo.com *QC*: Martin Léveillé, *QC – FAPAQ*, martin.leveille@fapaq.gouv.qc.ca	ON portion of the recovery plan is in draft, QC portion has been completed; intend to merge the two parts
FISH (also see Ecosystem Plans for Sydenham and Grand rivers)			
49 **Dace, Nooksack** *Rhinichthys sp.* Endangered (1996, 2000)	**BC, DFO**	**contacts:** **Jordan Rosenfeld, *BC – MWLAP*, Jordan.Rosenfeld@gems4.gov.bc.ca;** **Mike Pearson, *University of BC*, mpearson@portal.ca**	**no recovery team in place, but restoration and protection plans are being developed**
50 **Redhorse, Copper** *Moxostoma hubbsi* Threatened (1987)	QC, DFO, Parks	Pierre Aquin, *QC – FAPAQ*, replaced in 2001 by Francis Bouchard, Francis.Bouchard@fapaq.gouv.qc.ca	recovery plan produced by QC is being reviewed by DFO and Parks
51 **Sucker, Salish** *Catostomus sp.* Endangered (1996)	**BC, DFO**	**contacts:** **Jordan Rosenfeld, *BC – MWLAP*, Jordan.Rosenfeld@gems4.gov.bc.ca;** **Mike Pearson, *University of BC*, mpearson@portal.ca**	**no recovery team in place, but restoration and protection plans are being developed**
52 **Trout, Aurora** *Salvelinus fontinalis timagamiensis* Endangered (1987)	ON, DFO	Craig Jessop, *ON – MNR*, Craig.Jessop@mnr.gov.on.ca	a provincial management plan covering 1994-2004 is in place; recovery plan for 2000-2010 has been drafted
53 **Whitefish, Atlantic** *Coregonus huntsmani* Endangered (1984, 2000)	**DFO, NS**	**Bob Barnes, *DFO*, BarnesB@dfo-mpo.gc.ca;** **John Gilhen, *NS Museum of Natural History*, gilhenja@gov.ns.ca**	**development of a plan will be initiated in 2001-2002**
MOLLUSCS			
54 **Abalone, Northern** *Haliotis kamtschatkana* Threatened (1999, 2000)	DFO, Parks	Guy Parker, DFO, parkerg@dfo-mpo.gc.ca	recovery strategy and action plan have been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
rough estimate is 1000-2000 in southern ON, < 100 in QC	loss of suitable nesting, basking and hibernation sites; isolation of pops due to habitat loss and fragmentation; poaching of nests; predation of nests and fledged young; increase in fly larvae infestation of nests; pollution; introduction of exotics	ON: to be determined QC: to protect the key habitat on Lake Champlain; to establish a new pop. outside the Lake Champlain area; to achieve a viable and self-sustaining pop. level	ON: specific research and protection underway at Rondeau Provincial Park; research on fly larvae predation; public outreach QC: identification of key habitat (using telemetry); surveys in historical areas; habitat protection initiatives; stewardship; public awareness
evidence of range reduction in BC, several known pops have been extirpated	habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	to be determined	underway are: surveys to assess current distribution; establishment of local stewardship groups and collaboration with existing stewardship groups and local government; habitat creation and enhancement at key sites; analysis of how the local municipal regulatory framework can be used to better protect dace and sucker habitat
numbers are declining and range is contracting; only 2 know spawning areas, both in the Richelieu River	eutrophication and sedimentation due to intensive farming; dam construction; declining prey abundance (certain molluscs); water quality degradation (toxic chemicals)	to increase recruitment of the Richelieu River pop.; to establish a pop. outside the areas currently occupied; to improve habitat conditions (e.g., reduce contaminants and sediments)	constructed a fish ladder to facilitate movement of fish in the Richelieu River; artificial reproduction and rearing methods are being developed; have introduced young fish into the Richelieu River
declining; has been extirpated from some areas of BC	habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	to be determined	underway are: surveys to assess current distribution; establishment of local stewardship groups and collaboration with existing stewardship groups and local government; habitat creation and enhancement at key sites; analysis of how the local municipal regulatory framework can be used to better protect dace and sucker habitat
fish biomass is estimated at 16-17 kg/ha – stable or increasing	acidification of lakes prevents reproduction	to introduce the fish into a limited number of non-native lakes to maintain a brood stock for artificial breeding, establish "backup" pops, and provide limited angling opportunities	developed stocking guidelines and revised management plan; prepared a range map; continued to monitor water quality in the 2 native lakes
confirmed resident pops in Petite Rivière watershed but no estimate of numbers available; appears extirpated from remainder of its global range	introduction of smallmouth bass; acid rain; physical barriers; poaching; incidental fishing; restricted distribution	to define the life-history, habitat requirements, and scope for negative interactions with introduced fish species; to continue to acquire baseline info. on the fish's NS distribution via directed sampling and public consultations	progress in delimiting the species' distribution, developing assessment protocols, understanding basic biology, and assessing the feasibility of culturing the fish
total density declined 43.75% between 1993 and 1997 surveys	illegal harvesting / poaching combined with extremely low pop. levels; predation by recovering sea otter pop.	to reduce illegal harvesting through the development of a species and stock ID database and market investigations; to test a variety of proactive rebuilding techniques through experimental outplanting and manipulation experiments	underway are: stock-rebuilding experiments; habitat and stock assessment surveys; establishment of 5 pilot hatcheries to produce abalone juveniles; stewardship project

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
REPTILES			
48 **Turtle, Spiny Softshell** *Apalone spinifera* Threatened (1991)	ON, QC	*ON*: Scott Gillingwater indotestudo@yahoo.com *QC*: Martin Léveillé *QC – FAPAQ* martin.leveille@fapaq.gouv.qc.ca	ON portion of the recovery plan is in draft. QC portion has been completed; intend to merge the two parts
FISH (also see Ecosystem Plans for Sydenham and Grand rivers)			
49 **Dace, Nooksack** *Rhinichthys sp.* Endangered (1996, 2000)	BC, DFO	contacts: Jordan Rosenfeld, *BC – MWLAP*, Jordan.Rosenfeld@gems4.gov.bc.ca; Mike Pearson, *University of BC*, mpearson@portal.ca	no recovery team in place, but restoration and protection plans are being developed
50 **Redhorse, Copper** *Moxostoma hubbsi* Threatened (1987)	QC, DFO, Parks	Pierre Aquin, *QC – FAPAQ*, replaced in 2001 by Francis Bouchard Francis.Bouchard@fapaq.gouv.qc.ca	recovery plan produced by QC is being reviewed by DFO and Parks
51 **Sucker, Salish** *Catostomas sp.* Endangered (1996)	BC, DFO	contacts: Jordan Rosenfeld, *BC – MWLAP*, Jordan.Rosenfeld@gems4.gov.bc.ca; Mike Pearson, *University of BC*, mpearson@portal.ca	no recovery team in place, but restoration and protection plans are being developed
52 **Trout, Aurora** *Salvelinus fontinalis timagamiensis* Endangered (1987)	ON, DFO	Craig Jessop *ON – MNR* Craig.Jessop@mnr.gov.on.ca	a provincial management plan covering 1994-2004 is in place; recovery plan for 2000-2010 has been drafted
53 **Whitefish, Atlantic** *Coregonus huntsmani* Endangered (1984, 2000)	DFO, NS	Bob Barnes, *DFO*, BarnesB@dfo-mpo.gc.ca; John Gilhen, *NS Museum of Natural History*, gilhenja@gov.ns.ca	development of a plan will be initiated in 2001-2002
MOLLUSCS			
54 **Abalone, Northern** *Haliotis kamtschatkana* Threatened (1999, 2000)	DFO, Parks	Guy Parker, DFO, parkerg@dfo-mpo.gc.ca	recovery strategy and action plan have been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
rough estimate is 1000-2000 in southern ON, < 100 in QC	loss of suitable nesting, basking and hibernation sites; isolation of pops due to habitat loss and fragmentation; poaching of nests; predation of nests and fledged young; increase in fly larvae infestation of nests; pollution; introduction of exotics	ON: to be determined QC: to protect the key habitat on Lake Champlain; to establish a new pop. outside the Lake Champlain area; to achieve a viable and self-sustaining pop. level	ON: specific research and protection underway at Rondeau Provincial Park; research on fly larvae predation; public outreach QC: identification of key habitat (using telemetry); surveys in historical areas; habitat protection initiatives; stewardship; public awareness
evidence of range reduction in BC, several known pops have been extirpated	habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	to be determined	underway are: surveys to assess current distribution; establishment of local stewardship groups and collaboration with existing stewardship groups and local government; habitat creation and enhancement at key sites; analysis of how the local municipal regulatory framework can be used to better protect dace and sucker habitat
numbers are declining and range is contracting; only 2 know spawning areas, both in the Richelieu River	eutrophication and sedimentation due to intensive farming; dam construction; declining prey abundance (certain molluscs); water quality degradation (toxic chemicals)	to increase recruitment of the Richelieu River pop.; to establish a pop. outside the areas currently occupied; to improve habitat conditions (e.g., reduce contaminants and sediments)	constructed a fish ladder to facilitate movement of fish in the Richelieu River; artificial reproduction and rearing methods are being developed; have introduced young fish into the Richelieu River
declining; has been extirpated from some areas of BC	habitat loss and degradation due to human disturbance of streams occupied by the species (e.g., impacts of urbanization, agriculture and gravel extraction; water quality issues)	to be determined	underway are: surveys to assess current distribution; establishment of local stewardship groups and collaboration with existing stewardship groups and local government; habitat creation and enhancement at key sites; analysis of how the local municipal regulatory framework can be used to better protect dace and sucker habitat
fish biomass is estimated at 16-17 kg/ha – stable or increasing	acidification of lakes prevents reproduction	to introduce the fish into a limited number of non-native lakes to maintain a brood stock for artificial breeding, establish "backup" pops. and provide limited angling opportunities	developed stocking guidelines and revised management plan; prepared a range map; continued to monitor water quality in the 2 native lakes
confirmed resident pops in Petite Rivière watershed but no estimate of numbers available; appears extirpated from remainder of its global range	introduction of smallmouth bass; acid rain; physical barriers; poaching; incidental fishing; restricted distribution	to define the life-history, habitat requirements, and scope for negative interactions with introduced fish species; to continue to acquire baseline info. on the fish's NS distribution via directed sampling and public consultations	progress in delimiting the species' distribution, developing assessment protocols, understanding basic biology, and assessing the feasibility of culturing the fish
total density declined 43.75% between 1993 and 1997 surveys	illegal harvesting / poaching combined with extremely low pop. levels; predation by recovering sea otter pop.	to reduce illegal harvesting through the development of a species and stock ID database and market investigations; to test a variety of proactive rebuilding techniques through experimental outplanting and manipulation experiments	underway are: stock-rebuilding experiments, habitat and stock assessment surveys; establishment of 5 pilot hatcheries to produce abalone juveniles; stewardship project

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
MOLLUSCS			
55 **Banff Springs Snail** *Physella johnsoni* Threatened (1997) Endangered (2000)	**Parks**, AB	Charlie Pacas, *Parks*, charlie_pacas@pch.gc.ca	draft recovery plan
56 **Physa, Hotwater** *Physella wrighti* Endangered (1998, 2000)	**BC**	contact: Bryan Webster, *BC – MWLAP*, Bryan.Webster@gems2.gov.bc.ca	team being initiated; recovery plan has been drafted independently by an environmental consulting firm
LEPIDOPTERANS			
57 **Blue, Karner** *Lycaeides melissa samuelis* Extirpated (1991, 2000)	**ON**	Dawn Burke, *ON – MNR*, dawn.burke@mnr.gov.on.ca	recovery plan is being developed
PLANTS (also see Ecosystem Plans for Garry Oak, NS Coastal Plains, and Tallgrass Communities)			
58a **Braya, Fernald's** *Braya fernaldii* Threatened (1997, 2000) 58b **Braya, Long's** Braya longii Endangered (1997, 2000)	**NF**, Parks	Luise Hermanutz, *Memorial University of NF (MUN)*, lhermanu@mun.ca, and Henry Mann, *MUN*, hmann@beothuk.swgc.mun.ca	draft joint recovery plan (submitted for approval in 2001)
59 **Bulrush, Bashful** *Trichophorum planifolium* Special Concern (1986) Endangered (2000)	**ON**	Tyler Smith, *Royal Botanical Gardens*, tsmith@rbg.ca	first draft of recovery plan has been produced
60 **Chestnut, American** *Castanea dentata* Threatened (1987)	**ON**	John Ambrose, cercis@sentex.ca, and Greg Boland, *University of Guelph (UofG)* gboland@uoguelph.ca	recovery plan has been drafted
61 **Deerberry** *Vaccinium stamineum* Threatened (1994, 2000)	**ON**, Parks	Chris Burns, *ON – MNR*, chris.burns@mnr.gov.on.ca	recovery plan has been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
13,305 snails in all springs combined (2001)	lack of general public understanding and appreciation of microfauna; magnitude and extent of seasonal pop. lows; continued inadvertent and thoughtless habitat destruction by humans	to re-establish self-sustaining pops of the snail at all of its historic thermal spring locations (Upper Middle, Kidney, Upper Hot) while maintaining and enhancing present pops	preparation underway for re-introduction of snails into Middle and Kidney springs; completed Law Enforcement Strategy and increased habitat security measures; continued study of pop. fluctuations, snail microdistribution, water physicochemistry and flow, and thermal springs invertebrates; public outreach
1735 snails (1997), all in Liard River Hotsprings Provincial Park, in far northern BC – stable	vulnerable to changes to habitat (e.g., the addition of polluting substances such as soap or oil to the water, or changes in water flow)	to be determined	in preparation for drafting a recovery plan, produced an inventory and management recommendations paper; public outreach
declined by up to 90% since early to mid-1980s; only 2 of ON's 6 sites remained by early 1980s (Port Franks, St. Williams); no confirmed reports at either site	limited by decreasing availability of wild lupine, the larva's only source of food, due to fire suppression and extensive planting of pine trees (which hasten shading out of early successional habitat of wild lupine and other flowering plants used by the butterflies)	to be determined	in 1988 established the Karner Blue Butterfly Sanctuary in SW ON near Pinery Provincial Park; restoring oak savannah habitat in the sanctuary (e.g., controlled burns, tree cutting, plantings); plan to captive-rear butterflies from the U.S. for reintroduction
a) ~3500 plants in 14 sites (2000) b) ~7000 plants in 4 sites (2000) – both species appear to be stable	resources extraction (quarrying); uncontrolled development; mortality due to non-native insect	a) to maintain pop. levels within current distribution at viable pop. sizes and densities b) to maintain at viable pop. sizes, all extant pops occurring under natural disturbance regimes; to establish ≥ 3 viable pops in natural areas within the historical range from Sandy Cove to Green Island Cove, by 2005; to prevent the destruction of the Yankee Point site (important as a seed reservoir)	public consultation by conducting household interviews; production of educational brochure on the limestone barrens; formal request to have 2 critical pops of Long's braya protected under provincial Wilderness & Ecological Reserves Act; small-scale restoration of a once quarried Long's braya site; enhancement of ex situ pops at MUN Botanical Gardens; development of stewardship agreements
1 plant located in the Rouge Valley (2001); 1400 plants found in Cootes Paradise (2001); total pop. ~2000 plants	sensitive to disturbance; competition from exotic and native species may be detrimental; limited understanding of threats	to ensure the persistence of all existing pops; to collect seed from all existing pops for creation of ex situ pops; to conduct research to support recovery	first draft of recovery plan; habitat description and demographic study were initiated; searched for additional pops in Halton Region in 2001, but found none; seed was successfully germinated ex situ
~400 trees and root sprouts (1997)	chestnut blight fungus which appears as cankers on branches and trunk, causing crown of trees to die; habitat loss through forest clearing	to identify and implement management actions required to establish self-sustaining pops; to have resistant line(s) ready for planting in 2010-2015	site surveys; research on chestnut blight fungus
15 clumps in Thousand Island Region (TIR) + 2 clumps in Niagara Region (NR) (2001)	excessive disturbance; habitat change and fragmentation; potential lack of genetic variation; low seedling recruitment; climatic stress; fire suppression	TIR: self-sustaining pops of known sites, no extirpation, provision of suitable habitat in known range; NR: self-sustaining pops at present level or higher, more plants or more sites, provision of suitable habitat	recovery team and draft recovery strategy are in place; have initiated landscape level genetic research to determine genetic diversity and mode of reproduction

STATUS OF RECOVERY PLANNING CONTINUED

SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
MOLLUSCS			
55 **Banff Springs Snail** *Physella johnsoni* Threatened (1997) Endangered (2000)	Parks, AB	Charlie Pacas, *Parks*, charlie_pacas@pch.gc.ca	draft recovery plan
56 **Physa, Hotwater** *Physella wrighti* Endangered (1998, 2000)	BC	contact: Bryan Webster, *BC – MWLAP*, Bryan.Webster@gems2.gov.bc.ca	team being initiated; recovery plan has been drafted independently by an environmental consulting firm
LEPIDOPTERANS			
57 **Blue, Karner** *Lycaeides melissa samuelis* Extirpated (1991, 2000)	ON	Dawn Burke, *ON – MNR*, dawn.burke@mnr.gov.on.ca	recovery plan is being developed
PLANTS (also see Ecosystem Plans for Garry Oak, NS Coastal Plains, and Tallgrass Communities)			
58a **Braya, Fernald's** *Braya fernaldii* Threatened (1997, 2000) 58b **Braya, Long's** Braya longii Endangered (1997, 2000)	NF, Parks	Luise Hermanutz, *Memorial University of NF (MUN)*, lhermanu@mun.ca, and Henry Mann, *MUN*, hmann@beothuk.swgc.mun.ca	draft joint recovery plan (submitted for approval in 2001)
59 **Bulrush, Bashful** *Trichophorum planifolium* Special Concern (1986) Endangered (2000)	ON	Tyler Smith, *Royal Botanical Gardens*, tsmith@rbg.ca	first draft of recovery plan has been produced
60 **Chestnut, American** *Castanea dentata* Threatened (1987)	ON	John Ambrose, cercis@sentex.ca, and Greg Boland, *University of Guelph (UofG)* gboland@uoguelph.ca	recovery plan has been drafted
61 **Deerberry** *Vaccinium stamineum* Threatened (1994, 2000)	ON, Parks	Chris Burns, *ON – MNR*, chris.burns@mnr.gov.on.ca	recovery plan has been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
13,305 snails in all springs combined (2001)	lack of general public understanding and appreciation of microfauna, magnitude and extent of seasonal pop. lows, continued inadvertent and thoughtless habitat destruction by humans	to re-establish self-sustaining pops of the snail at all of its historic thermal spring locations (Upper Middle, Kidney, Upper Hot) while maintaining and enhancing present pops	preparation underway for re-introduction of snails into Middle and Kidney springs, completed Law Enforcement Strategy and increased habitat security measures, continued study of pop. fluctuations, snail microdistribution, water physicochemistry and flow, and thermal springs invertebrates, public outreach
1735 snails (1997), all in Liard River Hotsprings Provincial Park, in far northern BC – stable	vulnerable to changes to habitat (e.g., the addition of polluting substances such as soap or oil to the water, or changes in water flow)	to be determined	in preparation for drafting a recovery plan, produced an inventory and management recommendations paper, public outreach
declined by up to 90% since early to mid-1980s, only 2 of ON's 6 sites remained by early 1980s (Port Franks, St. Williams), no confirmed reports at either site	limited by decreasing availability of wild lupine, the larva's only source of food, due to fire suppression and extensive planting of pine trees (which hasten shading out of early successional habitat of wild lupine and other flowering plants used by the butterflies)	to be determined	in 1988 established the Karner Blue Butterfly Sanctuary in SW ON near Pinery Provincial Park restoring oak savannah habitat in the sanctuary (e.g., controlled burns, tree cutting, plantings), plan to captive-rear butterflies from the U.S. for reintroduction
a) ~3500 plants in 14 sites (2000) b) ~7000 plants in 4 sites (2000) – both species appear to be stable	resources extraction (quarrying), uncontrolled development, mortality due to non-native insect	a) to maintain pop. levels within current distribution at viable pop. sizes and densities b) to maintain at viable pop. sizes, all extant pops occurring under natural disturbance regimes, to establish ≥ 3 viable pops in natural areas within the historical range from Sandy Cove to Green Island Cove, by 2005, to prevent the destruction of the Yankee Point site (important as a seed reservoir)	public consultation by conducting household interviews, production of educational brochure on the limestone barrens, formal request to have 2 critical pops of Long's braya protected under provincial Wilderness & Ecological Reserves Act, small-scale restoration of a once quarried Long's braya site, enhancement of ex situ pops at MUN Botanical Gardens, development of stewardship agreements
1 plant located in the Rouge Valley (2001), 1400 plants found in Cootes Paradise (2001), total pop. ~2000 plants	sensitive to disturbance, competition from exotic and native species may be detrimental, limited understanding of threats	to ensure the persistence of all existing pops, to collect seed from all existing pops for creation of ex situ pops, to conduct research to support recovery	first draft of recovery plan, habitat description and demographic study were initiated, searched for additional pops in Halton Region in 2001, but found none, seed was successfully germinated ex situ
~400 trees and root sprouts (1997)	chestnut blight fungus which appears as cankers on branches and trunk, causing crown of trees to die, habitat loss through forest clearing	to identify and implement management actions required to establish self-sustaining pops, to have resistant line(s) ready for planting in 2010-2015	site surveys, research on chestnut blight fungus
15 clumps in Thousand Island Region (TIR) + 2 clumps in Niagara Region (NR) (2001)	excessive disturbance, habitat change and fragmentation, potential lack of genetic variation, low seedling recruitment, climatic stress, fire suppression	TIR: self-sustaining pops of known sites, no extirpation, provision of suitable habitat in known range; NR: self-sustaining pops at present level or higher, more plants or more sites, provision of suitable habitat	recovery team and draft recovery strategy are in place, have initiated landscape level genetic research to determine genetic diversity and mode of reproduction

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	PLANTS (also see Ecosystem Plans for Garry Oak, NS Coastal Plains, and Tallgrass Communities)			
62	**Fern, Southern Maidenhair** *Adiantum capillus-veneris* Endangered (1984, 1998, 2000)	BC	Ted Antifeau, *BC – MWLAP*, Ted.Antifeau@gems5.gov.bc.ca	recovery team formed in Nov. 2000; preliminary recovery planning underway
63	**Ginseng, American** *Panax quinquefolium* Threatened (1988) Endangered (1999, 2000)	ON, QC	Line Couillard, QC – *Environment*, line.couillard@menv.gouv.qc.ca, and Don Cuddy, *ON – MNR* (replaced in 2001 by Shaun Thompson, Shaun.Thompson@mnr.gov.on.ca)	recovery plan has been drafted
64	**Mountain-mint, Hoary** *Pycnanthemum incanum* Endangered (1986, 1998, 2000)	ON	Melinda Thompson, *ON – MNR*, melinda.thompson@mnr.gov.on.ca	recovery plan has been drafted
65	**Mulberry, Red** *Morus rubra* Threatened (1987) Endangered (1999, 2000)	ON, Parks	John Ambrose, cercis@sentex.net	recovery plan has been drafted
66	**Tree, Cucumber** *Magnolia acuminata* Endangered (1984, 1999, 2000)	ON	Donald Kirk, *ON – MNR*, donald.kirk@mnr.gov.on.ca	recovery plan has been drafted
67	**Wintergreen, Spotted** *Chimaphila maculata* Endangered (1987, 1998, 2000)	ON, QC	Melinda Thompson, *ON – MNR*, melinda.thompson@mnr.gov.on.ca	recovery plan has been drafted
68	**Wood-poppy** *Stylophorum diphyllum* Endangered (1993, 2000)	ON	contact: Dan Schaefer, *ON – MNR*, dan.schaefer@mnr.gov.on.ca	recovery plan has been drafted
69	**Woodsia, Blunt-lobed** *Woodsia obtusa* Threatened (1994) Endangered (2000)	ON, QC	Chris Burns, *ON – MNR*, chris.burns@mnr.gov.on.ca	recovery plan has been drafted
	ECOSYSTEMS / LANDSCAPES			
70	**Coastal Plains [N.S.]** 2 Endangered and 5 Threatened plants (see below)	NS, Parks	Sherman Boates and Mark Elderkin, *NS – Natural Resources*, boatesjs@gov.ns.ca, elderkmf@gov.ns.ca	plan in development
71	**Garry Oak Ecosystems** 6 Endangered and 2 Threatened plants 1 Endangered moss 2 Endangered and 1 Extirpated butterflies (see next page)	BC; CWS (DND lands), Parks	Marilyn Fuchs, foxtree@islandnet.com	recovery strategy has been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
only found in 2 sites in Fairmont Hot Springs and vicinity in SE BC; in first site, only 16 sterile fronds remained on ~4 plants (1996); in second site, hundreds of fronds were found (2000)	loss of habitat, through construction of holiday resorts and human use of hot springs	interim objectives: to identify site-specific conservation options; to conduct surveys at other hot springs and seepages in the vicinity	a second pop. of the plant was located in 2000 – although some fronds were fertile, the reproductive status has to be studied further; initiated landowner contact; conducted additional surveys
ON: 7 viable pops with a total of 8619 plants; QC: 15 pops with a total of 10,956 plants	small pop. size; habitat loss and degradation from clearing and logging; over-harvesting / poaching	to stop further losses of plant pops and habitat; to preserve genetic variability; to determine no. of pops and pop. distribution required to achieve recovery; to begin rehabilitation/ reintroduction of pops	restoration of small pops, landowner contacts, and management activities in ON provincial parks are all underway
~600 individuals (2000)	invasive species; habitat loss	to protect and manage existing habitat; to ensure existing pops become self-sustaining; to investigate possibility of restoring potential habitat and reintroducing species to historic sites	protection and monitoring of known pops, in cooperation with landowners
~200 trees (2000) plus numerous red X white mulberry hybrids	hybridization with white mulberry; vulnerability of small pops; some mortality due to twig blight; habitat loss or degradation	to conserve and, if necessary, restore functioning of pops to long-term stability in 2 regions in S ON	site surveys; white mulberry culling to reduce hybridization; genetics studies; searches for new individuals; continuation of pop. viability analyses; experimental transplanting
226 trees in 15 natural sites	habitat loss due to agricultural development, logging and clearing; low reproductive potential; requirement for forest openings for seedling establishment	to protect existing pops and habitats; to increase pop. size to 50 in ≥ 2 sites in each of 2 regions; to conduct research; to develop and implement a landscape restoration plan	have initiated contacting landowners to enlist their support; are exploring opportunities for landowner stewardship and community participation
525 individuals (2001)	no legal protection in place; damage from all terrain vehicles; detrimental forest management practices; collection by horticulturists	to prevent extirpation of small pops; to initiate research projects to assess pop. biology, genetics and ecology of the species	
~400 plants in 3 known locations (2001) – stable	limited availability of suitable and maintained habitat	to maintain and augment existing pops; to protect existing habitat (and to investigate possibly reintroducing plants)	voluntary protection of existing plants on private land
315 plants (2001) – stable	habitat alteration; development	to maintain and augment pop. size and distribution	research to define habitat needs; new occurrence located; surveys and habitat mapping of ON occurrences
	extensive losses and degradation of habitat from hydro power and shoreline development and recreation	to continue to conduct field studies; to designate protected areas or reserves	stewardship and education programs are being revived; working with the NS Power Corporation to manage water levels
approximately 1-5 % of historical extent of ecosystems remain in a near-natural condition	habitat loss and fragmentation; invasions of exotic species; ecological changes as a result of fire suppression; other factors	to develop the information base necessary for ecosystem and species recovery; to protect and manage sites and species at risk to minimize losses; to foster stewardship	recovery planning is well underway; research and inventory of rare plants and butterflies; ecosystem restoration research

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	PLANTS (also see Ecosystem Plans for Garry Oak, NS Coastal Plains, and Tallgrass Communities)			
62	**Fern, Southern Maidenhair** *Adiantum capillus-veneris* Endangered (1984, 1998, 2000)	BC	Ted Antifeau, *BC – MWLAP* Ted.Antifeau@gems5.gov.bc.ca	recovery team formed in Nov. 2000, preliminary recovery planning underway
63	**Ginseng, American** *Panax quinquefolium* Threatened (1988) Endangered (1999, 2000)	ON, QC	Line Couillard, *QC – Environment*, line.couillard@menv.gouv.qc.ca, and Don Cuddy, *ON – MNR* (replaced in 2001 by Shaun Thompson, Shaun.Thompson@mnr.gov.on.ca)	recovery plan has been drafted
64	**Mountain-mint, Hoary** *Pycnanthemum incanum* Endangered (1986, 1998, 2000)	ON	Melinda Thompson *ON – MNR* melinda.thompson@mnr.gov.on.ca	recovery plan has been drafted
65	**Mulberry, Red** *Morus rubra* Threatened (1987) Endangered (1999, 2000)	ON, Parks	John Ambrose, cercis@sentex.net	recovery plan has been drafted
66	**Tree, Cucumber** *Magnolia acuminata* Endangered (1984, 1999, 2000)	ON	Donald Kirk *ON – MNR* donald.kirk@mnr.gov.on.ca	recovery plan has been drafted
67	**Wintergreen, Spotted** *Chimaphila maculata* Endangered (1987, 1998, 2000)	ON, QC	Melinda Thompson, *ON – MNR*, melinda.thompson@mnr.gov.on.ca	recovery plan has been drafted
68	**Wood-poppy** *Stylophorum diphyllum* Endangered (1993, 2000)	ON	contact: Dan Schaefer *ON – MNR* dan.schaefer@mnr.gov.on.ca	recovery plan has been drafted
69	**Woodsia, Blunt-lobed** *Woodsia obtusa* Threatened (1994) Endangered (2000)	ON, QC	Chris Burns, *ON – MNR*, chris.burns@mnr.gov.on.ca	recovery plan has been drafted
	ECOSYSTEMS / LANDSCAPES			
70	**Coastal Plains [N.S.]** 2 Endangered and 5 Threatened plants (see below)	NS, Parks	Sherman Boates and Mark Elderkin, *NS – Natural Resources* boatesjs@gov.ns.ca, elderkmf@gov.ns.ca	plan in development
71	**Garry Oak Ecosystems** 6 Endangered and 2 Threatened plants 1 Endangered moss 2 Endangered and 1 Extirpated butterflies (see next page)	BC, CWS (DND lands), Parks	Marilyn Fuchs, foxtree@islandnet.com	recovery strategy has been drafted

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
only found in 2 sites in Fairmont Hot Springs and vicinity in SE BC; in first site, only 16 sterile fronds remained on ~4 plants (1996); in second site, hundreds of fronds were found (2000)	loss of habitat through construction of holiday resorts and human use of hot springs	interim objectives: to identify site-specific conservation options; to conduct surveys at other hot springs and seepages in the vicinity	a second pop. of the plant was located in 2000 – although some fronds were fertile, the reproductive status has to be studied further; initiated landowner contact; conducted additional surveys
ON: 7 viable pops with a total of 8619 plants; QC: 15 pops with a total of 10,956 plants	small pop. size; habitat loss and degradation from clearing and logging; over-harvesting / poaching	to stop further losses of plant pops and habitat; to preserve genetic variability; to determine no. of pops and pop. distribution required to achieve recovery; to begin rehabilitation/ reintroduction of pops	restoration of small pops, landowner contacts, and management activities in ON provincial parks are all underway
~600 individuals (2000)	invasive species; habitat loss	to protect and manage existing habitat; to ensure existing pops become self-sustaining; to investigate possibility of restoring potential habitat and reintroducing species to historic sites	protection and monitoring of known pops. in cooperation with landowners
~200 trees (2000) plus numerous red X white mulberry hybrids	hybridization with white mulberry; vulnerability of small pops; some mortality due to twig blight; habitat loss or degradation	to conserve and, if necessary, restore functioning of pops to long-term stability in 2 regions in S ON	site surveys; white mulberry culling to reduce hybridization; genetics studies; searches for new individuals; continuation of pop. viability analyses; experimental transplanting
226 trees in 15 natural sites	habitat loss due to agricultural development, logging and clearing; low reproductive potential; requirement for forest openings for seedling establishment	to protect existing pops and habitats; to increase pop. size to 50 in ≥ 2 sites in each of 2 regions; to conduct research to develop and implement a landscape restoration plan	have initiated contacting landowners to enlist their support; are exploring opportunities for landowner stewardship and community participation
525 individuals (2001)	no legal protection in place; damage from all terrain vehicles; detrimental forest management practices; collection by horticulturists	to prevent extirpation of small pops; to initiate research projects to assess pop. biology, genetics and ecology of the species	
~400 plants in 3 known locations (2001) – stable	limited availability of suitable and maintained habitat	to maintain and augment existing pops; to protect existing habitat (and to investigate possibly reintroducing plants)	voluntary protection of existing plants on private land
315 plants (2001) – stable	habitat alteration, development	to maintain and augment pop. size and distribution	research to define habitat needs; new occurrence located; surveys and habitat mapping of ON occurrences
	extensive losses and degradation of habitat from hydro power and shoreline development and recreation	to continue to conduct field studies; to designate protected areas or reserves	stewardship and education programs are being revived, working with the NS Power Corporation to manage water levels
approximately 1-5 % of historical extent of ecosystems remain in a near-natural condition	habitat loss and fragmentation; invasions of exotic species; ecological changes as a result of fire suppression; other factors	to develop the information base necessary for ecosystem and species recovery; to protect and manage sites and species at risk to minimize losses; to foster stewardship	recovery planning is well underway; research and inventory of rare plants and butterflies; ecosystem restoration research

STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
	ECOSYSTEMS / LANDSCAPES			
72	**Grand River** 2 Threatened fish: a **Black Redhorse** (1988) b **Eastern Sand Darter** (1994, 2000)	ON, DFO	Alan Dextrase, *ON – MNR*, alan.dextrase@mnr.gov.on.ca	recovery plan has been drafted
73	**South Okanagan** Similkameen Conservation Program (SOSCP) 7 Endangered, 5 Threatened and 1 Extirpated species (see below)	BC, CWS	Robert Hawes, SOSCP1@gems3.gov.bc.ca	species-specific recovery strategies are being developed in cooperation with the landscape-level conservation program
74	**Sydenham River** 3 Endangered molluscs 2 Threatened fish (see below)	ON, DFO	Alan Dextrase, *ON – MNR*, alan.dextrase@mnr.gov.on.ca; Shaun Staton, *DFO*, statons@dfo-mpo.gc.ca	recovery strategy is in development
75	**Tallgrass Communities** [Ontario] 8 Endangered plants 2 Threatened plants (see below)	ON	Lindsay Rodger, *WWF*, lrodger@wwfcanada.org	an ecological communities conservation plan (Tallgrass Communities in Southern Ontario) was published outside the auspices of RENEW in 1997

SPECIES INCLUDED UNDER ECOSYSTEM PLANS:

70 a) Thread-leaved Sundew (E – 1991); b) Pink Coreopsis (E – 1984, 1998, 2000); c) Water-pennywort (E – 1985; T – 1999, 2000); d) Plymouth Gentian (T – 1984, 1999, 2000); e) Golden Crest (T – 1987, 1999, 2000); f) Redroot (T – 1994, 2000); g) Sweet Pepperbush (T – 1986, 1998)

71 a) Apple Moss (T – 1997, E – 2000); b) Deltoid Balsamroot (E – 1996, 2000); c) Golden Paintbrush (E – 1995, 2000); d) Seaside Birds-foot Lotus (E – 1996, 2000); e) Prairie Lupine (E – 1996, 2000); f) Water-plantain Buttercup (E – 1996, 2000); g) Bearded Owl-clover (E – 1998, 2000); h) White-top Aster (T – 1996, 2000); i) Yellow Montane Violet (T – 1995, 2000); j) Island Blue (E – 2000); k) Taylor's Checkerspot (E – 2000); l) Island Marble (Extirpated – 1999, 2000)

73 a-g) species No. 1, 2, 19, 23, 28, 36, 39 above; h) Scarlet Ammania (E – 1999); i) Toothcup (E – 1999, 2000); j) Small-flowered Lipocarpha (T – 1992); k) Mexican Mosquito Fern (T – 1984, 1998, 2000); l) Behr's (Columbia) Hairstreak (T – 2000); m) Pygmy Short-horned Lizard [BC pop.] (Extirpated – 1992, 2000)

74 a) Northern Riffleshell (E – 1999, 2000); b) Rayed Bean (E – 1999, 2000); c) Wavy-rayed Lampmussel (E – 1999); d) Eastern Sand Darter (T – 1994, 2000); e) Spotted Gar (SC – 1983; T – 2000)

75 a) Gattinger's Skinner's (E – 1988, 1999); b) Skinner's Agalinis (E – 1988, 1999, 2000); c) Pink Milkwort (E – 1984, 1998, 2000); d) Purple Twayblade (E – 1989, 1999); e) Slender Bush Clover (E – 1986, 1999, 2000); f) Small White Lady's Slipper (E – 1981, 1999, 2000); g) White Prairie Gentian (E – 1991); h) Goat's-rue (E – 1996) i) Bird's-foot Violet (T – 1990); j) Colicroot (T – 1988, 2000)

NOTE

A "Species", as defined by COSEWIC, is "any indigenous species, subspecies, variety, or geographically defined pop. of wild fauna and flora."

POPULATION ESTIMATE AND TREND IN CANADA	CAUSES FOR CONCERN	PLAN GOALS OR OBJECTIVES	RECENT PROGRESS
new sites have been found for Eastern Sand Darter, extending known range of Brantford pop. by ~17 km	siltation and drainage associated with agricultural and urban development, dams preventing migration	to facilitate the protection and recovery (within the watershed) of the at-risk fish species found in the Grand River Watershed	combining species-specific information into an ecosystem plan that will account for characteristics and traits common and distinctive to each species
	continued loss and degradation of habitat due to development	the program aims to maintain the rich biodiversity of the SOS area, including species at risk, and a viable ecological corridor between the deserts to the south and the grasslands to the north	multi-partner effort to secure natural habitats by acquisition or stewardship; expanded community involvement
declining (see Species at Risk web site for species-specific pop. estimates)	habitat degradation due to urban, agricultural and resource development	to take an ecosystem approach to sustaining biodiversity and pops of at-risk aquatic species, integrating advice and knowledge from disparate sources; to ensure the timely implementation of recovery actions	recommendations for recovery actions have stemmed from analyses of water quality, stream channel structure and function, land use, and species at risk; initial stakeholder meeting to promote stewardship
the ~ 2100 ha of prairie, savanna and woodland known to be remaining in S ON in 1992 represents < 3% of the pre-settlement extent of prairie and savanna in this region	mostly habitat destruction, also alteration of ecological processes (e.g., fire suppression, altered hydrology), habitat degradation and invasion by exotic species	the 8 goals include communication, coordination and information-sharing; compilation of information regarding all tallgrass community remnants; protection and restoration of tallgrass habitats; public awareness; basic and applied research	developing "Save Ontario Savannas" land owner contact project, which includes compilation of baseline data on a site by site basis and a threat assessment to allow for future monitoring of progress

Piping Plover
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STATUS OF RECOVERY PLANNING CONTINUED

	SPECIES (COSEWIC DESIGNATION)	RESPONSIBLE JURISDICTIONS (lead in bold)	RECOVERY TEAM CHAIR or Contact	STATUS OF RECOVERY PLAN
ECOSYSTEMS / LANDSCAPES				
72	**Grand River** 2 Threatened fish	ON, DFO	Alan Dextrase, *ON – MNR* alan.dextrase@mnr.gov.on.ca	recovery plan has been drafted
a	**Black Redhorse** (1988)			
b	**Eastern Sand Darter** (1994, 2000)			
73	**South Okanagan** Similkameen Conservation Program (SOSCP) 7 Endangered, 5 Threatened and 1 Extirpated species (see below)	BC, CWS	Robert Hawes, SOSCP1@gems3.gov.bc.ca	species-specific recovery strategies are being developed in cooperation with the landscape-level conservation program
74	**Sydenham River** 3 Endangered molluscs 2 Threatened fish (see below)	ON, DFO	Alan Dextrase, *ON – MNR* alan.dextrase@mnr.gov.on.ca Shaun Staton, *DFO* statons@dfo-mpo.gc.ca	recovery strategy is in development
75	**Tallgrass Communities** [Ontario] 8 Endangered plants 2 Threatened plants (see below)	ON	Lindsay Rodger, *WWF*, lrodger@wwfcanada.org	an ecological communities conservation plan (Tallgrass Communities in Southern Ontario) was published outside the auspices of RENEW in 1997

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71 a) Apple Moss (T – 1997, E – 2000), b) Deltoid Balsamroot (E – 1996, 2000), c) Golden Paintbrush (E – 1995, 2000), d) Seaside Birds-foot Lotus (E – 1996, 2000), e) Prairie Lupine (E – 1996, 2000), f) Water-plantain Buttercup (E – 1996, 2000), g) Bearded Owl-clover (E – 1998, 2000), h) White-top Aster (T – 1996, 2000), i) Yellow Montane Violet (T – 1995, 2000), j) Island Blue (E – 2000), k) Taylor's Checkerspot (E – 2000), l) Island Marble (Extirpated – 1999, 2000)

73 a-g) species No. 1, 2, 19, 23, 28, 36, 39 above, h) Scarlet Ammania (E – 1999), i) Toothcup (E – 1999, 2000), j) Small-flowered Lipocarpha (T – 1992), k) Mexican Mosquito Fern (T – 1984, 1998, 2000), l) Behr's (Columbia) Hairstreak (T – 2000), m) Pygmy Short-horned Lizard [BC pop.] (Extirpated – 1992, 2000)

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	continued loss and degradation of habitat due to development	the program aims to maintain the rich biodiversity of the SOS area, including species at risk, and a viable ecological corridor between the deserts to the south and the grasslands to the north	multi-partner effort to secure natural habitats by acquisition or stewardship; expanded community involvement
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Piping Plover
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FINANCIAL CONTRIBUTORS

[illegible]	Species or Group	PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $33,000) Total
Abitibi Consolidated	11	0.02	1.00	2.10
Acadia Centre for Wildlife and Conservation Biology	46	1.60	0.50	88.50
Acadia University	46		2.50	2.50
Acadian Peninsula Naturalists	30		1.00	1.00
Agriculture and Agri-Food Canada	32		2.00	2.00
Alaska Government	3	0.40	3.00	25.00
Alberta Conservation Association	3, 6, 9, 28	0.20	168.50	179.50
Alberta Ecotrust Foundation	28		5.00	5.00
Alberta Fish and Game Association	33	0.10	2.00	7.50
Alberta Government	3, 9, 25, 28, 33	1.60	114.80	202.80
Alberta Sport, Recreation, Parks and Wildlife Foundation	9, 28		14.00	14.00
Alpine Club of Canada	23	0.12	0.37	6.97
Attention Frag'Îles	30, 35	2.10	9.20	124.70
Bamfield Community School Association	54		4.00	4.00
Bamfield Marine Station	54		8.00	8.00
Bird Studies Canada	27, 31, 38	0.20	3.40	14.40
Bluebird Society	73		5.00	5.00
Bluenose Atlantic Coastal Action Program	35	0.02	2.00	3.10
Bow Valley Naturalists	55		0.30	0.30
British Columbia Conservation Foundation	73		15.00	15.00
British Columbia Government	1, 3, 7, 10, 19, 23, 26, 28, 29, 36, 39, 41, 42, 56, 71, 73	25.09	1271.74	2651.69
Brock University	44	0.16	0.15	8.95
Calgary Zoo	9, 20	1.85	54.60	156.35
Canada Economic Development	50	0.02	300.00	301.10
Canada Trust Friends of the Environment Foundation	29, 47		10.00	10.00
Canadian Cattlemen's Association	32		15.00	15.00
Canadian Chestnut Council	60	1.00		55.00
Canadian Council for Human Resources in the Environment Industry (CCHREI)	28		9.00	9.00
Canadian Nature Federation (Important Bird Area Community Action Fund)	30, 35		7.50	7.50
Canadian Parks and Wilderness Society (CPAWS)	73		5.00	5.00
Canadian Peregrine Foundation	23	2.40	50.00	182.00
Canadian Raptor Conservancy	27	0.10	1.00	6.50
Canadian Wildlife Federation	28, 47		22.00	22.00
Capital Regional District Parks	71	0.05		2.75
Champagne and Aishihik First Nation (Yukon)	3	1.00	20.00	75.00
City of Cap-aux-Meules	30		0.10	0.10
City of Étang-du-Nord	30		0.10	0.10
City of Fatima	30		0.10	0.10
City of Grande-Entrée	30		0.10	0.10
City of Grosse-île	30		0.10	0.10
City of Havre-Aubert	30		0.10	0.10
City of Havre-aux-Maisons	30		0.10	0.10
City of Vancouver (Stanley Park Burrowing Owl Facility)	28	1.00	10.20	65.20
City of Windsor	44	0.21	0.50	12.05
City of Winnipeg	32		2.00	2.00
Columbia Basin Fish and Wildlife Compensation Program	1, 41	1.16	95.50	159.30
Columbia Basin Trust	41	0.13	21.00	28.15
Community Animation Program	28		2.50	2.50
Community Futures Development Corporation of Haida Gwaii	54		0.25	0.25
Comox-Strathcona Regional District	71	0.01		0.55
Conservation Corps of Newfoundland and Labrador	58	0.75	9.00	50.25
Corner Brook Pulp and Paper Ltd.	11	0.02	1.00	2.10
Crowne Plaza Hotel, Ottawa	23		0.20	0.42
Deninu Kue First Nation	3	0.50	69.50	97.00

FINANCIAL CONTRIBUTORS (CONTINUED)

Contributor	Species or Group	PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Department of National Defence (DND)	42		16.00	16.00
District of Saanich	71	0.02	0.10	1.20
Ducks Unlimited	31, 32, 73		14.50	14.50
Earthling Communications	32		8.00	8.00
Elsa Wild Animal Appeal of Canada	28		2.50	2.50
Emerald Property Services	23		0.20	0.42
Enbridge Inc.	28		1.50	1.50
Environment Canada (Canadian Wildlife Service – CWS)	3, 9, 20, 22, 23, 24, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 47, 71	10.70	1021.05	1609.27
Environment Canada (EC)	10, 18, 28, 30, 42, 44, 73, 74	0.30	734.40	751.12
ESRF (Endangered Species Recovery Fund) (54% federal, 46% WWF)	1, 3, 11, 14, 17, 24a, 24b, 28, 30, 35, 38, 42, 44, 46, 47, 48, 55, 58, 60, 68, 71	3.55	384.22	579.47
Essex Region Conservation Authority	31		0.50	0.50
Ferma Aggregates Incorporated	32		5.00	5.00
Fisheries and Oceans Canada (DFO)	13, 14, 15, 16, 17, 30, 47, 50, 53, 54, 74	5.09	1503.80	1783.75
Forest Renewal BC	1, 7, 26, 29		2231.00	2231.00
Friends of Charleston Lake Provincial Park	45		1.20	1.20
Friends of Murphy's Point Provincial Park	45		1.00	1.00
Friends of Ojibway Prairie	44		1.87	1.87
Geoff Laird Carpentry	32		5.00	5.00
George Cedric Metcalf Charitable Foundation	47		29.00	29.00
Granby Zoological Society	48	0.09	0.50	5.45
Grand River Conservation Authority	72	0.10		5.50
Great Lakes Renewal Foundation	74		10.00	10.00
Groupe de recherche et d'éducation sur les mammifères marins (GREMM)	14		10.00	10.00
Habitat Conservation Trust Fund	1, 2, 7, 23, 26, 42, 73		314.00	314.00
Habitat Haldimand	27	0.10	1.00	6.50
Habitat Stewardship Program (HSP) (federal: EC, DFO, Parks)	14, 16, 17, 19, 24, 28, 30, 32, 35, 36, 39, 42, 44, 46, 47, 54, 73, 74	0.43	1994.93	2018.58
Haida Gwaii Marine Resource Group	54	0.10	0.14	5.64
Haldimand and Area Stewardship Council	27		1.20	1.20
Haldimand Bird Observatory	27	0.05		2.75
Halifax Field Naturalists	30	0.10	0.20	5.70
Hamilton Field Naturalists	23	0.62	6.00	40.10
Hawk Cliff Raptor Banding Station	23	0.02	0.10	1.20
Hélimax	5		3.00	3.00
Hubbs Research Institute	47		5.00	5.00
Human Resources Development Canada (HRDC)	11, 28, 30, 44		94.18	94.18
Hydro One Helicopter Services	23		2.75	2.86
Hydro-Québec	22		30.00	30.00
Industry Canada (Haida Fisheries Program)	54	0.28	28.41	43.81
International Fund for Animal Welfare (IFAW)	48	0.80	1.00	45.00
International Institute for Aerospace Survey and Earth Sciences (ITC)	71	0.02		1.10
Inuvialuit Implementation Funds	4		96.00	96.00
Invermere Veterinary Hospital	1	0.04		2.20
Irving Eco-Centre – Dune de Bouctouche	30	0.20	1.30	12.30
James Baillie Memorial Fund	20		1.00	1.00
Kamloops Veterinary Hospital	1	0.02		1.10
Kamloops Wildlife Park	28	1.80	26.20	125.20
Kent, Lambton, and Middlesex Stewardship Councils	74	0.80		44.00
Kingston Field Naturalists	32		1.00	1.00
Kingsville Animal Clinic	44	0.02	0.50	1.33
Kitkatla Abalone	54	0.27	32.00	46.85
Land Conservancy of British Columbia	73		16.00	16.00
Laskeek Bay Conservation Society	54	0.12	0.25	6.85
Long Point Foundation for Conservation	24	0.01	3.00	3.55
Long Point Region Conservation Authority	27	0.05	0.50	3.25
Manitoba Cattle Producers Association	32		20.00	20.00
Manitoba Government	3, 23, 28, 30, 32, 33	0.95	37.63	89.88

FINANCIAL CONTRIBUTORS (CONTINUED)

	Species or Group	PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Manitoba Hydro	32		3.00	3.00
Manitoba Rural Development Initiative	33	0.25	1.00	14.75
Margaret Gunn Endowment for Animal Research	3	1.10	10.00	70.50
Martineau Walker Law Firm	23	0.20	5.00	16.00
McBride Foundation	38		1.00	1.00
McGill University	32		60.00	60.00
McIlwraith Field Naturalists	23	1.44	2.20	81.40
Memorial University of Newfoundland	58	0.40	9.20	31.20
Mountain Equipment Co-Op	28, 38, 71		8.00	8.00
Municipality of Tracadie	30		10.40	10.40
National Fish and Wildlife Foundation	28		55.00	55.00
Natural Resources Canada (Canadian Forest Service)	11	2.04	82.86	195.06
Natural Resources Canada (Polar Continental Shelf Project)	4		8.40	8.40
Natural Sciences and Engineering Research Council of Canada (NSERC)	1, 28, 35, 47, 58, 71		181.45	181.45
Nature Conservancy of Canada	24, 32, 48, 71	0.15	270.50	278.75
Nature Saskatchewan	28, 30		815.00	815.00
Nature Trust of British Columbia	18, 36, 73		555.15	555.15
NBTel	30		0.70	0.70
Nestucca Trust Fund	23, 26		22.00	22.00
New Brunswick Government	30	0.30	38.50	55.00
Newfoundland-Labrador Government	11, 18, 23, 30, 58	4.34	114.04	352.74
Niagara College of Applied Arts and Technology	44	0.06		3.30
Niagara Peninsula Conservation Authority	44	0.18	3.70	13.60
Norfolk Land Stewardship Council	27	0.05	0.60	3.35
North American Waterfowl Management Plan (NAWMP, federal)	28		12.00	12.00
Northwest Territories Government	3, 4, 20, 23	5.76	312.30	629.10
Nova Scotia College of Geographical Sciences	46	0.10		5.50
Nova Scotia Government	23, 30, 35, 46	0.77	27.20	69.55
Nunavut Government	4, 23	1.28	143.10	213.50
Nunavut Wildlife Management Board	4, 15	0.10	30.00	35.50
Ojibway Prairie Nature Reserve	44	0.01		0.55
Okanagan/Similkameen Conservation Alliance	73		14.00	14.00
Ontario Federation of Anglers and Hunters (Simcoe Conservation Dinner Committee)	27		0.50	0.50
Ontario Government	23, 24, 27, 30, 31, 32, 38, 43, 44, 45, 52, 59, 60, 61, 64, 65, 66, 67, 69, 72, 74	6.87	317.90	695.86
Operation Migration	20	3.60	132.00	330.00
Ottawa Field Naturalists	23	0.31	0.20	17.25
Owl Foundation	23	0.48	1.00	27.40
Owl Research Foundation	32		1.00	1.00
Parks Canada Agency (Canadian Heritage, Parks)	1, 3, 4, 9, 11, 14, 20, 23, 30, 44, 45, 46, 48, 50, 55, 61, 71	9.70	1145.18	1678.68
Piper Project	30	0.80	8.20	52.20
Piping Plover Conservation Fund	30		1.00	1.00
Portage Natural History Society	32		2.00	2.00
Prince Edward Island Government	30	0.10	10.70	16.20
Protected Areas Association of Newfoundland and Labrador	11	0.02	1.00	2.10
Province of Quebec Society for the Protection of Birds	32		2.50	2.50
Public Service Commission	46		2.50	2.50
Quebec Government	5, 18, 23, 48, 50	2.76	679.00	830.80
Quebec Wildlife Foundation	5, 14, 32, 50	0.02	90.00	91.10
Queen's University	61		10.00	10.00
Regional Aquatic Management Society	54	0.36	14.00	33.80
RESCOUSSE	50	0.09	1.10	6.05
Roy Consultants	30		5.40	5.40
Royal Botanical Gardens	59, 64, 65	1.90		104.50
Royal British Columbia Museum	71	0.05	1.70	4.45

FINANCIAL CONTRIBUTORS (CONTINUED)

[illegible]	Species or Group	PYs	excluding salary dollars, including in-kind contributions $1000s	$1000s+ (PYs x $55,000) Total
Royal Ontario Museum	72, 74	0.15		8.25
Sable Offshore Energy Incorporated	35		2.80	2.80
Saskatchewan Government	9, 20, 28, 33	0.55	50.00	80.25
Saskatchewan Wetland Conservation Corporation	28		25.00	25.00
SaskEnergy	28		7.00	7.00
SaskPower	30		5.00	5.00
Sault Naturalists	23	0.10	0.20	5.70
Shell/Shell Canada	27, 28, 38		22.20	22.20
Sifton Properties	23		0.15	0.37
Simcoe District Fish and Game Club	27	0.10	1.00	6.50
Société de conservation des Îles-de-la-Madeleine	35	0.20		11.00
Songhees First Nation	71	0.01		0.55
South Saskatchewan Wildlife Association	28		2.00	2.00
St. Lawrence National Institute of Ecotoxicology	14		10.00	10.00
St. Lawrence Valley Natural History Society	48	0.04	0.50	2.70
St. Lawrence Vision 2000	14		40.00	40.00
St. Clair Region Conservation Authority	74	0.20	1.00	12.00
Tallgrass Ontario	27		2.20	2.20
Tembec Industries, British Columbia Division	1		2.00	2.00
Terra-plex Innovations	44		4.00	4.00
Thunder Bay Field Naturalists	23	0.19	2.00	12.45
TimberWest	10		200.00	200.00
Toronto Zoo	32, 40, 44	0.07	76.70	80.33
Trans-Canada Transmissions	23, 28		7.28	7.50
Transport Canada	50	0.02	165.00	166.10
Trent University	40		5.00	5.00
Unidentified Source	10, 23, 28	1.00	85.30	140.30
United States Government	7		250.00	250.00
Université du Québec à Rimouski	5	0.18		9.90
University College of the Cariboo	1	0.06		3.30
University of British Columbia	71		3.00	3.00
University of Calgary	3	0.50	3.50	31.00
University of Guelph	65, 74	3.50		192.50
University of Maine	11	0.06		3.30
University of Victoria	1, 71	0.10		5.50
Upper Thames River Conservation Authority	48	0.20	1.00	12.00
Utah State University	11	0.02		1.10
Vancouver Aquarium Marine Science Centre	16	1.49	31.00	112.95
Village Ford	28		3.30	3.30
Volunteers/Individuals	1, 3, 10, 17, 18, 20, 23, 25, 27, 28, 30, 32, 35, 38, 43, 44, 46, 47, 48, 53, 54, 58a, 58b, 60, 65, 66, 67, 71	24.76	459.30	1820.88
Walpole Island First Nation	31		0.50	0.50
Weyerhaeuser Canada	1, 10	4.00	257.00	477.00
Wildlife Habitat Canada	28		5.00	5.00
Wildlife Preservation Trust Canada	9, 28, 32		53.00	53.00
Wildlife Trust	9		3.00	3.00
World Fisheries Trust	54	0.05		2.75
World Wildlife Fund (excluding contribution to ESRF)	15, 54	0.22	10.00	22.10
Yukon Fish and Wildlife Management Board	3	0.50	5.50	33.00
Yukon Government	3, 23	1.50	48.00	130.50
Zoo sauvage de St-Félicien	18	0.10	4.00	9.50
	TOTAL – 214 contributors	**183.93**	**18 115.14**	**[illegible] 581.07**

PY=person year
($55,000 on average, including salary and overhead)

FUNDING per SPECIES OR GROUP

TOTALS > $100,000

Harlequin Duck (Eastern population) 52.0 (0.88 PY)
Beluga Whale (St Baffin Isle-Cumberland Sound pop.) 39.1 (1.3 PY)
Prairie Loggerhead Shrike 46.0 (1.25 PY)
American Chestnut 18.85 (1.0 PY, 1.0 VPY)
Barn Owl (Eastern population) 47.0 (0.90 PY, 0.60 VPY)
Woodland Caribou (Boreal population) 130.0
Sage Grouse (Prairie population) 35.0 (0.75 PY, 1.0 VPY)
Oregon Spotted Frog 135.0
Northern Leopard Frog (Southern Mountain population) 77.5 (1.25 PY)
Sage Thrasher 150.0
Roseate Tern 78.7 (1.34 PY, 0.04 VPY)
Blanding's Turtle (Nova Scotia population) 25.2 (2.20 PY, 0.70 VPY)
Atlantic Whitefish 70.0 (1.0 PY, 1.1 VPY)
Woodland Caribou (Atlantic-Gaspésie population) 121.0 (1.18 PY)
American Badger (jeffersonii subspecies) 147.5 (0.55 PY, 0.20 VPY)
Swift Fox 132.6 (1.18 PY)
Western Yellow-breasted Chat (BC pop.) 201.0
Spiny Softshell Turtle 30.5 (3.48 PY)
Bowhead Whale (Eastern Arctic population) 175.0 (1.0 PY)
Fernald's Braya / Long's Braya 145.2 (1.55 PY, 0.10 VPY)
Leatherback Turtle 183.88 (0.58 PY, 0.80 VPY)
Garry Oak Ecosystems 127.1 (.96 PY, 1.85 VPY)
Sydenham River 116.0 (3.45 PY)
Eastern Massasauga Rattlesnake 240.31 (1.29 PY, 0.12 VPY)
Red Mulberry 14.0 (3.90 PY, 3.0 VPY)
Northern Abalone 359.6 (1.20 PY, 0.02 VPY)
Killer Whale (North Pacific "resident" populations) 421.7 (1.49 PY)
Peary Caribou (Banks Island, High Arctic, and Low Arctic populations) 344.4 (3.90 PY)
Beluga Whale (St. Lawrence River population) 656.0
Whooping Crane 247.0 (6.46 PY, 1.10 VPY)
Acadian Flycatcher / Hooded Warbler 637.7 (0.57 PY)
American Marten (Newfoundland population) 360.4 (7.95 PY)
Marbled Murrelet 449.3 (6.86 PY)
Northern Spotted Owl 470.0 (7.0 PY)
Right Whale 502.0 (1.5 PY, 5.1 VPY)
Eastern Loggerhead Shrike 937.5 (0.2 PY)
Anatum Peregrine Falcon 363.1 (10.0 PY, 2.58 VPY)
Burrowing Owl 720.2 (4.7 PY, 3.6 VPY)
Wood Bison 527.0 (13.15 PY, 0.3 VPY)
South Okanagan – Similkameen Conservation Program (SOSCP) 1558.6
Vancouver Island Marmot 1195.5 (8.0 PY)
Piping Plover 1291.6 (11.3 PY, 0.4 VPY)
Copper Redhorse 2011.1 (2.1 PY)

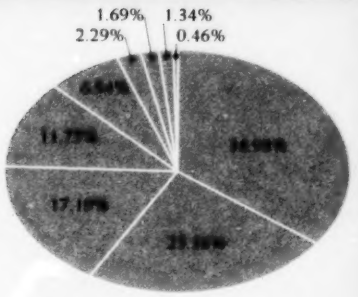
< $50,000 ALL CONTRIBUTIONS TOTALED, ASSUMING 1 PY=$55,000

Kirtland's Warbler 6.50, 0.01 PY
Northern Cricket Frog 10.00
Wood-poppy 10.00
Henslow's Sparrow 10.50, 0.02 PY
Hotwater Physa 14.50
Bashful Bulrush 0.30 PY
Blunt-lobed Woodsia 1.0, 0.30 PY
Black Rat Snake 13.70, 0.10 PY
Cucumber Tree 21.00, 0.20 VPY
Pallid Bat 35.00
Wolverine (East pop) 8.20, 0.40 PY, 0.10 VPY
Deerberry 23.00, 0.30 PY
Aurora Trout 14.00, 0.62 PY

$50,000-$100,000 ALL CONTRIBUTIONS TOTALED, ASSUMING 1 PY=$55,000

Grand River 31.00, 0.40 PY
Blue Racer 25.00, 0.30 PY, 0.25 VPY
King Rail 42.50, 0.25 PY
Spotted Wintergreen 6.00, 0.80 PY, 0.40 VPY
White-headed Woodpecker 80.00
Banff Springs Snail 43.50, 0.90 PY
Prothonotary Warbler 28.80, 1.00 PY, 0.20 VPY
Hoary Mountain-mint 7.00, 1.60 PY

BREAKDOWN BY CONTRIBUTOR (%)



34.98% **Federal Government**
23.36% **Provincial/Territorial Government**
17.19% **NGOs (non-govt organizations)**
11.75% **Corporations/Businesses**
6.94% **Private donations/Volunteer time**
2.29% **Museums/Zoos/Aquaria**
1.69% **Universities**
1.34% **Aboriginal contributions**
0.46% **Regional/Municipal Governments**

(Canadian sources only)

15 (PY) 10 5 0 500 1000 1500 2000 2500 ($1000s)

Salaried person years (PYs)
Volunteer person years (VPYs)
Financial contribution excluding personnel (in $1000s)

Woodland Caribou (Southern Mountain population) 2065.0 (5.5 PY)

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Recovery of Nationally Endangered Wildlife

Canada's national recovery program, launched in 1988 to rescue wildlife species at risk of extinction and to prevent other species from becoming at risk, is called RENEW (the acronym for REcovery of Nationally Endangered Wildlife). The program now involves federal, provincial and territorial government agencies, wildlife management boards authorized by a land claims agreement, aboriginal organizations, other organizations, and interested individuals working together for the recovery of endangered, threatened or, where possible, extirpated species that have been designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The recovery process includes formation of national recovery teams, development of recovery strategies and action plans, cooperative recovery actions, and program evaluation. The RENEW program operates under the direction of the Canadian Endangered Species Conservation Council and is supported by the RENEW Secretariat, based at the Canadian Wildlife Service in Ottawa.

RENEW gratefully acknowledges the assistance of the Canadian Wildlife Service of Environment Canada in producing this report.